THE INTERNATIONAL LIGHT RAIL MAGAZINE

TRAMWAYS & URBAN TRANSIT

FORMERLY *LIGHT RAIL & MODERN TRAMWAY*

1478

SUNDERLAND LINK TO METRO: FIRST SERVICES IN TWO YEARS

DUBLIN GOVERNMENT TO SANCTION EARLY START ON CITY LIGHT RAIL

MY TRANSPORT VISION, BY THE WEST MIDLANDS TRAVEL BOSS

FEBRUARY 1999
No 734 £2.50

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771460 832012

Ian Allan PUBLISHING

TRAMWAYS & URBAN TRANSIT

The official journal of the Light Rail Transit Association

FEBRUARY 1999

Vol 61 No. 734

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Published jointly by

IAN ALLAN PUBLISHING Riverdene Business Park, Molesey Road, Hersham, Surrey KT12 4RG. Tel 01932 266600.

and

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Tramways & Urban Transit is sent free of charge to all paid-up members of the Light Rail Transit Association. You are welcome to join the LRTA - details can be obtained from the Membership Secretary, 23 Shrublands Close, Chigwell, Essex IG7 5EA, or elsewhere in this issue.

Direct subscriptions to *Tramways & Urban Transit*

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If you're on the Internet, you must visit the LRTA's website. It's a treasure house of information!

Docklands Light Railway units 45 and 74 have been painted black with white lettering to advertise ice hockey at the London Arena. They are seen at West Ferry on 5 December with a service for the soon-to-close Island Gardens station. **A.R. Sewell**

FRONT COVER: Metro de Madrid is expanding rapidly, and new rolling stock is now being delivered for the large-profile lines. 6007, one of the new CAF-built units, is seen at Canillejas depot. ***R. H. Rappelt***

Llandudno says: We want tramway within two years

The resort of Llandudno in North Wales is in line for a 4.6 km (three mile) tram system by the year 2001 with the news that an application for planning permission will be made at the end of January from the private sector to construct a Parry People Mover.

The proposed tramway forms part of a proposed £25 million private sector project for a transport and leisure development in the Victorian seaside town.

Parry People Movers of Cradley Heath will design and build the ultra light metre-gauge tramway and the company hopes to start tests almost immediately with the Llandudno prototype on the Welsh Highland Railway out of Caernarfon.

The Llandudno People Mover will accommodate 20 seated and 15 standing passengers and is specifically designed for the less able. Vehicles will have a traditional appearance.

Much of the alignment of the original tramway, which closed in 1956, will be used. The project, which is entirely in keeping with Government and EU policies on integrated transport, has support from the office of Transport Commissioner Neil Kinnock. The Welsh Office has allocated £1.1 million of European money to help fund the scheme and the promoters will provide match funding.

According to Peter Caldwell, managing director of Gloddeath, the company heading the project, the new tramway and leisure development will bring new jobs and prosperity to the resort as well as underpin existing employment.

He says: "There has been a growing recognition that to maintain its position as a vibrant and prosperous town, Llandudno must improve what it has to offer to its residents and to visitors to the area.

"Public funds for this simply do not exist, so we need to attract inward investment both to bolster existing employment and to create new jobs."

Appeal for funds for Llandudno 7

The Llandudno Seaside Tramway Society's 1999/2000 plans includes completion of the lower deck shell of L&CB tram 7, the restoration of missing parts on Lisbon 305 and its repaint. The society can be contacted at Trem Y Gloddaeth, Glanwydden, Llandudno LL31 9JP.

Sunderland here w

The Government has approved the £84m extension of the Tyne & Wear Metro to Sunderland and South Hylton. Reconstruction of the present Railtrack line should start in early autumn with a view to running services by Christmas 2001.

John Prescott, Deputy Prime Minister and Secretary of State for the Environment, Transport & The Regions granted Nexus, the Tyne & Wear PTA's application for an Order under the Transport & Works Act.

This is despite a recommendation by the Inspector, who held a public inquiry into the scheme last January last year, that the line beyond Sunderland University was not necessary.

Announced as part of the annual transport settlement, the government has approved an initial grant of £1.5 million towards the £84 million scheme, but has given only provisional approval subject to ratification of a full funding package and other eligibility and value for money procedures.

This is only expected to be a formality. European funding amounting to £14.7 million should be announced in the spring and Railtrack is to adapt the existing 14.5-km (9 miles) rail line from Pelaw to Sunderland to accommodate dual running between Metrocars and conventional heavy rail stock. They will also construct the 4.5 km (2.8 miles) South Hylton extension and maintain the whole infrastructure. Operation will remain directly with Nexus.

Eight new stations are proposed, including a major new central transport interchange at the Civic Centre/Park Lane, Sunderland beyond the existing Sunderland railway station. Work on redeveloping this area, including provision for the Metro extension, is currently under way. Four existing stations will be updated to Metro standard.

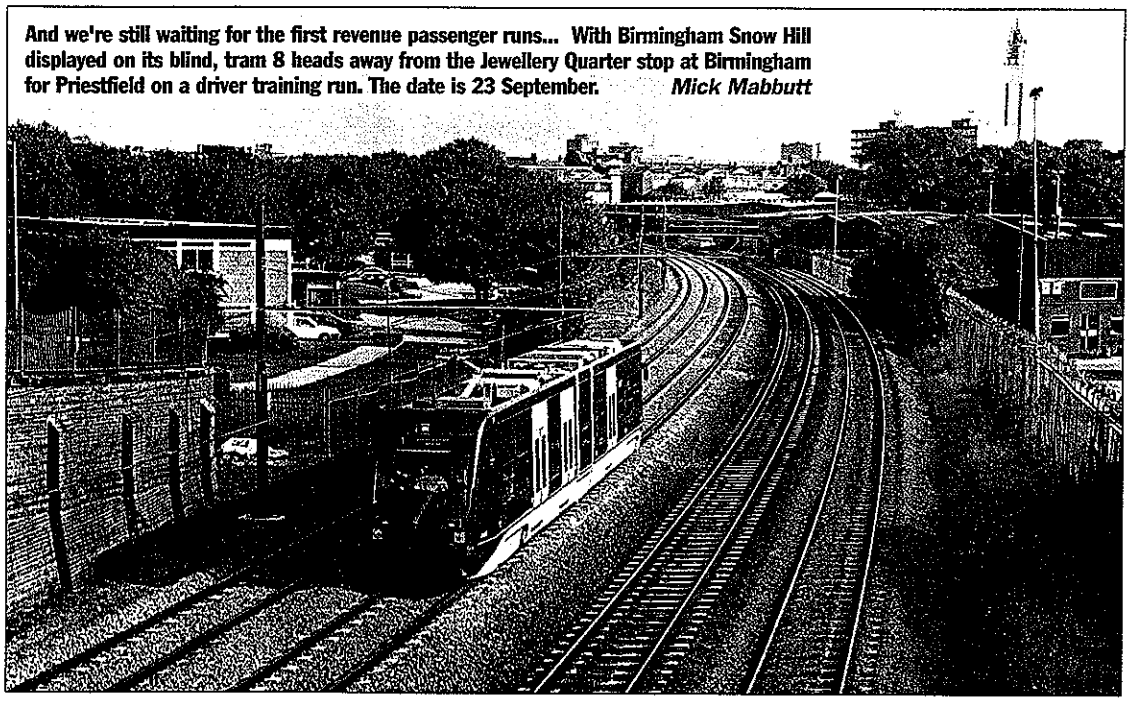
A 10-minute headway is proposed which will be provided without any increase in the existing Metrocar fleet of 90 which by 2000 will all have received mid-life refurbishments.

Spare vehicles have been available for some time following the reduction in demand for Metro services which followed bus deregulation and the collapse of the PTA's original Integrated Transport policy.

It is perhaps ironic for Dr John Reid, Transport Minister, to give the official Government viewpoint that "this is the sort of project we should be supporting if we are going to deliver integrated transport at the local level."

The extension is likely to have a major effect on the economic attractiveness of the Sunderland area by binding it more effectively to Tyneside and the wider conurbation.

There will be substantial improvements to the environment including an estimated reduction of 140 000 vehicle hour journeys per annum. An associated reduction in vehicle emissions will amount to over 2000 tonnes per annum. Eleven million passengers are expected to be generated annually which will be around 25% of the total for the fully



And we're still waiting for the first revenue passenger runs... With Birmingham Snow Hill displayed on its blind, tram 8 heads away from the Jewellery Quarter stop at Birmingham for Priestfield on a driver training run. The date is 23 September. *Mick Mabbutt*

It's April for Midland Metro (or maybe a few weeks later...)

Tram services will not be operating on the Midland Metro until at least April, and possibly later. Altram has confirmed that due to 'technical difficulties' a service cannot be provided until then, but has refused to be categoric about whether the line will be operational even then.

To meet the 18 January start-up date it had been intended to commence final commissioning trials on 7 December, but a PTA meeting on that date was told that this was unlikely to be the case.

Commissioning procedures had been "right up against the wire on the schedule" through late delivery of trams and a series of teething problems which, although relatively minor, received some high profile local publicity. These included the fitting of windscreen wipers which did not clear a sufficient area to please the Railway Inspectorate.

However, a more serious fault developed in December when after a rainy spell it was found that water had ingressed into the electrical system on one tram. The Inspectorate then banned further trials until the reason for the leak had been established. Phil Bateman, Travel Midland Metro spokesman, said: "An investigation is taking place to see how water was able to reach the electrical system. We don't know the outcome." Trial running recommenced a few days before Christmas.

It is reported that penalties on the consortium for failing to meet the original opening date are mounting at £24 000 per day from last November. Even if the line is operational by early April these will have reached £3.6 million.

Many PTA members are pressing for these penalties to be applied in full, but no formal decision has been made.

come!

extended Metro network.

News of the approval has been welcomed by most business and civic leaders in the region, particularly as around 1000 new jobs are likely to be created in the construction and operation of the line, together with associated developments.

However, local residents in South Hylton who objected to the reactivation of the former railway alignment which will be used for the new line, feel aggrieved that John Prescott has overruled recommendation of the inquiry inspector, Derek Mellor, to terminate the line at Sunderland University, three stations short of South Hylton.

He felt there was little unsatisfied demand for public transport along the route and the proposals would cause "inevitable disturbance during construction and, indeed, that of operation of a service, plus the loss of a valuable and attractive footpath and cycleway amenity."

Congestion, parking cash aids local projects

The first of the delayed 'daughter paper' supplement to the Government's Integrated Transport White Paper issued in December, and seeks consultation on a wide range of measures designed to tackle congestion and pollution.

Entitled *Breaking the Jogjam*, it is seen by the Government as a way of getting Britain moving by allowing local authorities to introduce road user charges and workplace parking charges which in turn will fund local transport objectives.

The document sets out proposals for the introduction of primary legislation to allow a pilot group of authorities to retain 100% of revenues raised provided these are set against worthwhile projects to improve local transport.

Consultation is invited before 31 March, and comment on what should be included in secondary legislation and guidance, including limits to the size of charges, exemptions, penalties and procedures for appeals.

John Prescott, Deputy Prime Minister, expressed his views: "Local authorities in approved pilot schemes will be able to keep all of the money raised to spend on worthwhile local transport improvements - for at least ten years.

"There's a public mood for change. We all know traffic jams cost - and they don't just hit the economy but society and the environment as well. They can't continue to go unchecked. But we need better public transport for people to choose to use their cars less."

It remains to be seen however whether car drivers will be prepared to pay out on congestion charging or for workplace parking when no viable alternatives have been provided. Will the proposed improvements to the local transport infrastructure be wholly weighted in favour of public transport, or will the funds accumulated by local authorities generate sufficient revenue to implement worthwhile schemes?

Above all, will the funding provided be additional to realistic Local Transport Plan funding or will it be seen by a future Chancellor as an acceptable alternative? These questions will no doubt surface during the relatively short consultation stage. It is remains debatable whether answers will surface as quickly!

Copies of the consultation document can be obtained direct by writing to DETR Free Literature, PO Box 236, Wetherby, West Yorkshire, LS23 7NB, or calling 0870 1226 237, quoting product code ILT0488.

Island Gardens station closes

The Docklands Light Railway was expected to close the Island Gardens line beyond Crossharbour from 9 January to enable works to take place to connect the existing line to the Lewisham extension.

The existing stations at Mudchute and Island Gardens are to be closed with Mudchute relocated to the new alignment when public service commences early next year. Bus substitution will be provided for the interim period.

The DLR is continuing to investigate further, longer term, extensions to its network. These centre on the North Woolwich–Woolwich Arsenal–Thamesmead corridor and an extension from Stratford to the proposed Stratford International station on the Channel Tunnel Rail Link.

Edinburgh survey

Coping with over half a million additional passenger journeys in the city of Edinburgh is to be the subject of a study of public transport options commissioned by the Scottish Office, City of Edinburgh and Lothian Councils, and Edinburgh Enterprise. Oscar Faber will conduct the analysis.

Beamish wants to spend £4 million

A major development proposal for Beamish Museum sees £4 million being spent on a number of major projects in the next two financial years.

These would include a £2 million large objects store and £420 000 spent of a steam railway project. £215 000 will be spent on preparing a new tram for service and providing a period shelter. Much of the finance required is being obtained from the Heritage Lottery Fund and the European Regional Development Fund Objective 2 Fund.

Metro homes link is 'not viable'

Plans for a 'complementary route' linking a 2500 new homes and 10 000-job industrial park close to Newcastle Airport with the Metro have been shelved by the Tyne & Wear PTA. It has been estimated only 10% of people working in the new area are expected to use public transport.

Initially a tram-type operation had been proposed, linking the Regent Centre with Newcastle Airport via the northern development area. Bernard Garner, head of planning and development at Nexus, has indicated to the authority that a fixed route scheme is not viable. The authority has agreed to reserve a route for the project but will operate a high quality bus route with Metro-style stops.

London's boost for public transport

Some £27 million of the £84 million 1999-2000 transport settlement for Greater London authorities has been earmarked for public transport improvements, including a range of local schemes.

The London Bus Priority Network has been given a £1 million increased allocation meaning that £12 million will be spent on improving bus corridors and public transport interchanges.

A further £2.8 million is allocated to six other public transport packages. £3.3 million is for on-going support for six other projects including the Barking–Gospel Oak railway line. The £27 million allocation is set alongside an identical sum allocated for road safety schemes and minor works, together with £30 million for highway maintenance.

TMS honour for Geoffrey Claydon

The Transport Museum Society has elected the LRTA's Geoffrey Claydon a Vice-President in recognition of 40 years' continuous service on its board of management.

The tram work programme includes repairs to Gateshead 5 (trolley assembly and compressor), Blackpool 40 (new canopy bends) and Sheffield 74 (full armature rewind). All formed part of the 1998 operating fleet and should be ready for the new season.

Restoration of Oporto 273 is continuing slowly and Liverpool 869 is receiving an eight-year overhaul. Winter services, on a shortened route due to trackwork at Wakebridge, are maintained by Leeds 399 and Glasgow 22.

Early start is likely for Dublin light rail

Pessimistic predictions of further delays to the Dublin Light Rail project have not been supported by events so far. An orderly sequence of events in rapid succession at the end of 1998 seems to pave the way to an early start to the project.

A preliminary session of the public inquiry into the application by Coras Iompair Eireann (CIE) for a Light Railway Order for the Tallaght Line took place on 23 October. This was to settle procedural matters. The formal hearings extended over 20 days between 2 November and 1 December. Inspector Judge Sean O'Leary, was assisted by Stephen Firth of Her Majesty's Railway Inspectorate as technical assessor.

With commendable speed, the Inspector forwarded his report to Mary O'Rourke, Minister for Public Enterprise, on 18 December.

Besides the voluminous evidence given and the supporting comments and plans submitted by applicants, the Inspector has to hear and digest a great deal more from other parties. While some were legitimate formal objections to aspects of the plans, others took inordinate amounts of time to raise matters which were of little or no relevance to the current application.

The report extends over 118 pages, and there is still a possibility that the Minister may vary the detailed content on any Order she may make.

This is how Dublin city centre could look within a couple of years. Recent visitors will have noticed how road traffic is ruining city life. *LUAS*

The Inspector has advised the Minister to grant the Order applied for, subject to 21 conditions. These are mainly to protect those with sustainable objections. Several parties were clearly afflicted with 'compensationitis'. Three had the nerve to present identical submissions, but the Inspector has given them very short shrift. He has agreed inner city traders may be inconvenienced by the loss of kerbside facilities for loading and unloading goods, concluded that streets must be re-claimed "for the general good of the population" and queried why larger traders have not made provision for off-street loading. The most difficult

Fine-tuning the ticketing structure

By GEOFF LUSHER
General Manager, Travel Midland Metro

The fine tuning of Altram's initial fares structure for Midland Metro continued during the last two months of 1998.

It can be confirmed that transfer tickets will be available from Metro ticket machines for through journeys onto services operated by Central Trains on the Jewellery Line and its extensions, using the convenient cross-platform interchange at The Hawthorns, Jewellery Quarter and Birmingham Snow Hill stops.

Discussions are continuing with bus operators in the West Midlands to secure the widest possible availability for Altram's Metro/Bus day ticket, and Birmingham Coach Company, Choice Travel and Travel West Midlands have already signed up to participate in what is likely to be the most popular bus/metro intermodal ticket sold on buses and at Metro stops.

In addition, transfer tickets for single and return journeys to any point accessible by TWM bus within Birmingham's Middleway or Wolverhampton's Ring Road will be available at Metro stops as well as Centro's Day Centrocard and Day Tripper tickets.

Metro patronage will further benefit from a comprehensive range of pre-paid travel passes, from Centrocards, Busmasters and Travel West Midlands' Travelcard to Metro's own Metrocard. Finally, West Midlands senior citizens concessionary passes will be valid on Metro at all times except peak hours (first tram to 09.30 and 15.30 to 18.00 on Mondays to Fridays).

A comprehensive, integrated fares structure, designed particularly to complement the high quality and comfort of Midland Metro in attracting and retaining that elusive new customer – the private car driver.

Midland Metro follows the route of the former Great Western Railway line between Snow Hill and Priestfield, which, for the historians amongst us, was opened as a mixed (broad and standard) gauge line on 14 November 1854 having been engineered by one John Robinson McClean, and not by the illustrious Isambard Kingdom Brunel. The great man was, however, called in to re-design five girder bridges, one of which had collapsed delaying the original opening date by three months!

My historical diversion serves to emphasise the nature of the line, much of which was on embankment or in cuttings, with the eight intermediate stations in GWR days being replaced by twenty Metro stops on this section.

Rendering our line visible to its potential customers is a basic marketing issue, and Altram has commissioned Doric Signs to supply totem pole signs bearing the Metro logo at each stop.

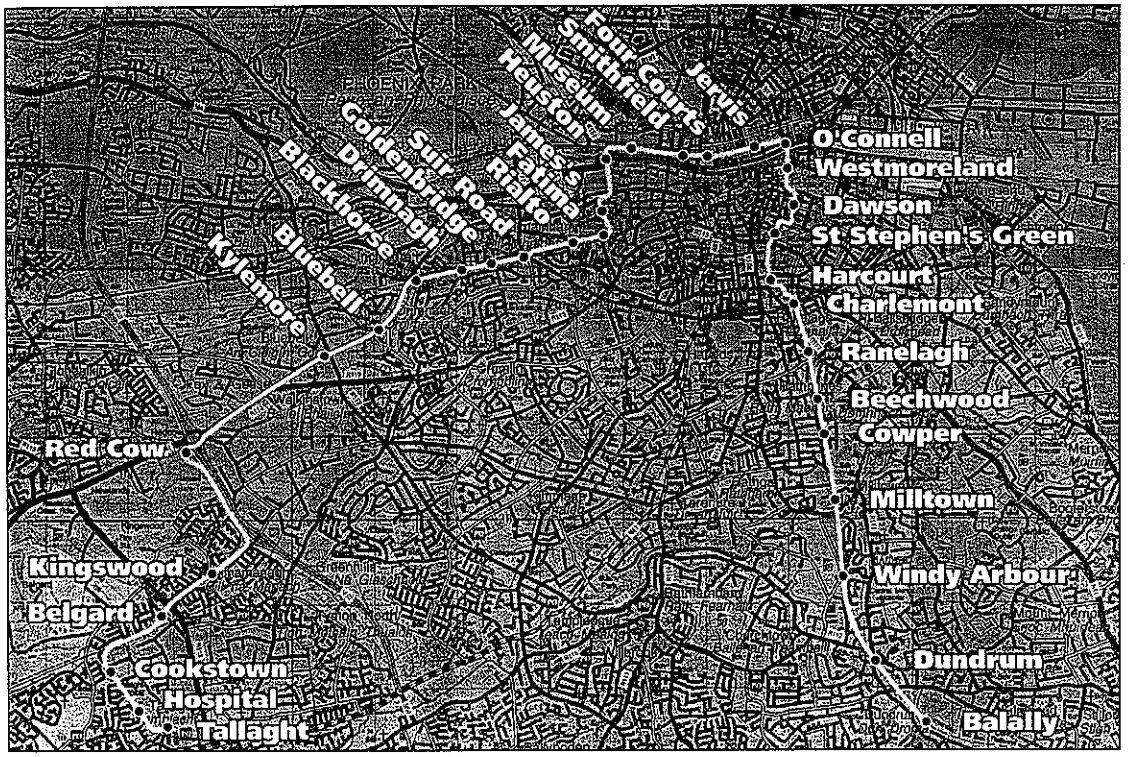
Travel West Midlands' marketing staff are designing the public information displays at each stop, which will include a location map featuring the nearest bus stops for connecting services and local traffic objectives, as well as fares and timetable information and the Metro line diagram. The adjacent bus stops will also benefit from passenger shelter upgrading, improved customer information and Metro branding.

Altram's meeting with the DPTAC Sub-Committee duly took place on 7 December, when the opportunity was taken to present the tram and stop design and emphasise the features which had been built in to make the system accessible to the disabled.

The members of the sub-committee expressed pleasure at the trouble which had been taken in the accessibility field, including extensive consultation with many local groups representing the disabled, and it is hoped that an inspection can be arranged for the sub-committee nearer to the opening date.

Christmas was celebrated in wonderful fashion at Midland Metro with our first annual carol service, held in the running shed in the company of two of our trams, and very ably organised by Phil Parkin, our associate chaplain. Officiating at the service was the Rev John Bassett, West Midlands Chaplain of The Railway Mission, and the address was given, appropriately, by Stuart Mustow, the former County Surveyor of the West Midlands whose staff started the initial planning work on Midland Metro.

Many staff and their families attended, and we looked forward to a New Year when all the planning, preparation and training will culminate in Midland Metro becoming an integral and high quality part of the public transport network in the West Midlands.



The proposed routing of the Dublin LUAS system.

question was raised by the fate of 12 properties (ten of them homes) which must be demolished at Arran Quay Terrace.

A favourable decision from the Minister is eagerly anticipated. She has re-appointed Judge O'Leary to conduct a further inquiry into a subsequent application from CIE for another Light Railway Order for a line from St Stephen's Green to Stillergan. In addition, she has officially opened the public consultation process for the proposed line northwards from the city centre to Ballymun and perhaps Dublin airport.

By coincidence, a strongly supported lobby, including Meath County Council is promoting the concept of re-instating the Clonsilla-Navan railway line (23.5 miles/38 km, closed 1963). This is aimed at providing a commuter rail service through an area which has a rapidly growing population. Costs of IEP 60 million to 90 million have been mentioned but as yet there has not had any official comment either way about this idea.

Clifton Flewitt

Public/private deal is still on course

Despite recommendations to the contrary by the Environment, transport and regional affairs Parliamentary committee, the Government has confirmed its intention to proceed with a partnership arrangement to modernise London Underground infrastructure over the next 15-plus years.

A short-list of around 12 companies bidding for the PPP concessions was expected to be announced at the end of December when a decision is likely on whether the contracts will be let in one, two or three batches.

Railtrack, always regarded as a strong contender for the surface lines contract, has reaffirmed its interest, particularly as it believes it would allow a revival of the Crossrail project. The Circle, District and Metropolitan Lines are considered large enough to take main line trains which could link Liverpool Street with Paddington.

Crossrail, a £2.1 billion scheme for a new east-west mainline link under the capital, was dropped in 1996 due to the high initial investment involved. Use of existing infrastructure would be seen as more affordable, although the logistics of interworking mainline and very frequent Underground services need careful consideration.

Midland Metro sponsors the arts

As part of the "One Per Cent For Art" requirements attached to the development of Midland Metrolink, an eight-legged stainless steel horse has been placed on a hill overlooking the Metro Centre. Sculpted by local artist Steve Field of Dudley and manufactured locally for £113 000, it has been named *Sleipnir* after the eight legged steed of the Norse God, Odin.

Less success has accompanied the announcement that a special song for the Metro opening has been commissioned at a cost of £40 000. The idea has been attacked by local politicians and transport consultative groups as a waste of money.

Altram's commitment to the area has also seen £500 000 allocated to various other schemes including a bridge lighting scheme and marker bollards.

Of the latest rebuff, an Altram spokesperson said: "It is very unfortunate that the councillors have decided to attack this now when it is about to go ahead, rather than when it was discussed."

Metrolink expects fleet additions

The first of the six new trams intended for the new Eccles branch line is expected to be delivered to Manchester in March.

The cars, constructed by Ansaldo, will have three phase AC motors, rather than the DC motors of the current Firema fleet. The cars will be able to run in multiple, but because of the amount of street running on the branch are being equipped with side skirts and coupler covers. Test and service running of the new cars will take place on the existing Altrincham–Bury line.

All six trams will be required to provide an anticipated 12-minute headway between Eccles and Piccadilly station when the new service begins towards the end of this year. Four of the existing fleet are to be equipped with side bogie skirts to allow cover for maintenance.

Should service levels to Eccles need to be increased, it is likely that resources would have to be found by short turning main service cars in peak hours at Whitfield or Timperley.

Funding for the short branch to the Lowry Centre at Salford Quays and the longer branch to Dumplington to serve the Trafford Centre retail park has not been secured and both of these projects are considered long term, well behind the Oldham/Rochdale line and the part of the East Manchester/Ashton line required to serve Commonwealth Games sporting venues in 2002. However, if private funding can be put in place, these lines and that to Manchester Airport could be given greater priority.

Free travel on Metro for the New Year

The Tyne & Wear PTE was again able to offer free travel to bus and Metro passengers on New Year's Eve, when services were extended into the early morning to cater for visitors to town centres and a fireworks display.

No Metro services were operated on Christmas Day or New Year's Day and only a 30-minute daytime headway was operated on Boxing Day.

Metro staff have again become concerned about late night violence on the system and have threatened industrial action if the situation is not improved. However, the PTE has indicated that there has been a noticeable fall in the number of such incidents in recent years, although a recent spate of bricks being thrown at trains has distorted statistics. An arrest for those offences has been made.

Following the steady policy of dedicating refurbished Metrocar vehicles to famous local figures, car 4060 was named *Thomas Bewick* in a ceremony on 30 November.

New alliance to fight for South Hants LRT

A new alliance has been formed in advance of the public inquiry into the South Hampshire Light Rapid Transit which is due to commence on 9 February.

The Pro Metro Alliance has been formed by the Gosport & Fareham branch of Friends of the Earth in conjunction with the LRTA and the Railway Development Society.

The group has been set up as a forum for individuals, businesses and local transport campaigners to argue that a modern light rail line is the correct solution for the peninsula locations of Gosport and Portsmouth

These are both areas where vehicle traffic is regularly at a standstill because the demand for road space cannot be satisfied by the level of Government investment currently available for improvements.

Formation of the group is in response to criticisms of the £147 million project from a number of local residents and business leaders as well as the lack of support from Labour councillors on Gosport Borough Council.

Friends of the Earth representative John Vivian declares the aim of the group is to demonstrate that the LRT line was much needed in the area:

He says: "We are encouraging anyone in favour of the scheme to write letters to the Inquiry Inspector. Critics should realise that this is a major step towards the area having an improved public transport system."

■ **See DETR letter, page 67.**

London to host the 2001 UITP congress

Continental light rail vehicles may be coming to the UK in two years' time following the approval for London Transport to stage the 54th International Union of Public Transport (UITP) Congress.

The date is May 2001. The event, which is accompanied by a vast display of equipment and manufacturers' show, is held every two years, most recently in Paris (1995) and Stuttgart (1997). This year's show is in Toronto. The last time it was staged in the UK was 1969, at the time of the opening of the Victoria Underground line.

Winter services in Blackpool

The winter tram service introduced in Blackpool on 7 November operates to the same pattern as in recent years. The Pleasure Beach again remained open at weekends until Christmas, requiring a Saturday supplementary service Pleasure Beach–Cleveleys requiring four Railcoaches. Extra journeys were were also required on Sundays to supplement the basic service pattern which only requires four one-man trams to maintain.

Single line operation was instituted from 30 November between North Station and Gynn Square where the southbound track is being relaid. The other track is likely to follow. Other work is taking place near the depot.

Tram 709 has been rewired as part of its major overhaul which has included new end framework. Other members of this class have received, or are scheduled for, a winter repaint, including 715/6 (completed) and 708/10/3/24. Car 701 received a panel repaint following damage repairs.

Contributors

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Acknowledgements are also due to *DETR, Fylde Tramway Society, Nexus, RDS, Birmingham Evening Mail, Birmingham Post, Newcastle Journal, Portsmouth News, Southern Daily Echo, Sunderland Echo and Yorkshire Evening Post.*

£650m scheme to cut congestion

The annual round of local transport funding announced by Transport Minister Dr John Reid in December included a number of projects which are intended to demonstrate that the Government is meeting its commitment to integrated public transport and reducing dependence on the private car.

The package of measures is to receive £135 million of Government support for 1999-2000 while authorities will be allowed to borrow almost £500 million. Government expenditure is up 60% on the 1998-99 allocation.

Dr Reid commented: "This year marks a turning point for local transport funding. By increasing allocations across the board we are showing our resolve to press ahead with the programme we announced during the summer in the Integrated Transport White Paper and the Comprehensive Spending Review.

"We are targeting resources where they are most needed. Besides promoting alternatives to the private car we are taking prudent steps to improve the condition of the local road network and to sustain the drive for greater road safety."

It is clear that many of the measures for improving the local road network are linked to public transport initiatives. A number of these are major schemes for corridor improvements in areas where cheaper alternatives to the introduction of light rail have been sought. These include Leeds, Leicester, Bristol and Luton/Dunstable. However, of the five major schemes provisionally accepted for funding, three relate to public transport projects.

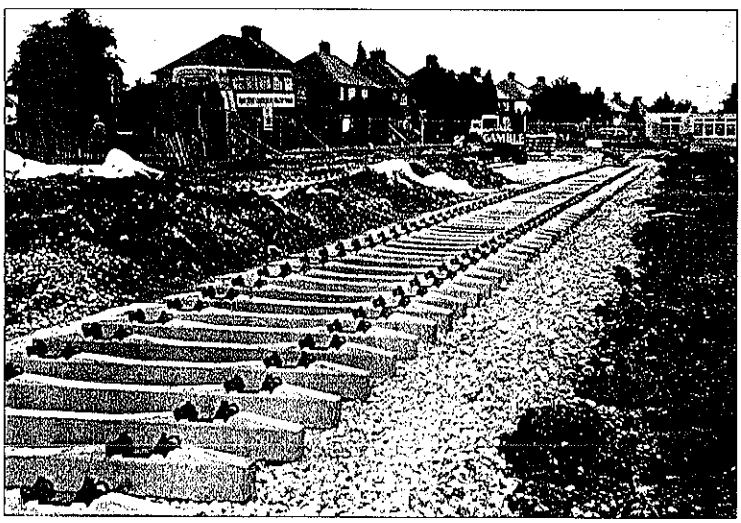
The Sunderland and South Hylton extension of the Tyne & Wear Metro is the by far the most significant of these major projects but also given the green light is the Merseyside Rapid Transit project which is seeking to introduce trolleybus technology in the form of a guided light transit system.

The East Leeds Quality Bus Project promoting guided bus and other priority measures on the Selby and York Road corridors is also provisionally accepted.

Almost certainly the most northerly location you're ever likely to see a Croydon tram - the National Exhibition Centre in Birmingham. Unit 2533, built by Bombardier in Wien (Vienna) was displayed at November's Railtech exhibition. ***John Laker***

Croydon track laying is making good progress

Trackwork is now evident on most sections of Croydon Tramlink, with the exception of the major traffic junctions in the town centre where disruption over the busy pre-Christmas trading period was kept to a minimum to avoid unnecessarily antagonising shoppers and retailers. Major work is, however, under way in the vicinity of East Croydon station where the three-track layout has now been formed.



The overhead is being extended on the Wimbledon section to allow longer running possibilities for trams on test. The section from Wandle Park towards Wimbledon was energised before Christmas.

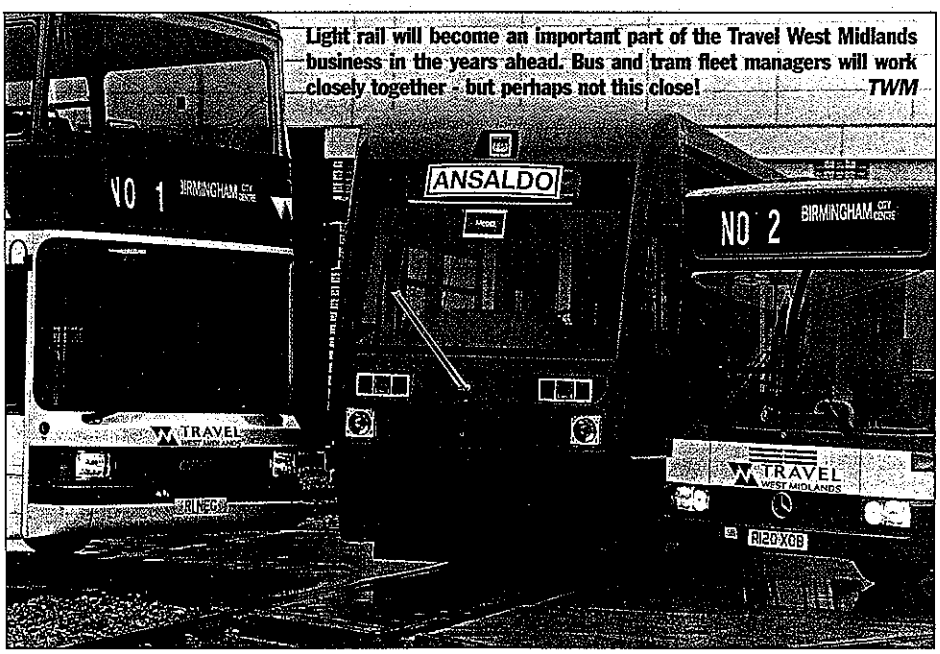
Croydon Tramlink's new 12-page update booklet includes a picture sequence of the delivery of the first light rail car from Wien (Vienna). Copies can be obtained from the Tramlink Information Centre by telephoning 0181 760 5729.

Tracklaying took place in the area around the Salcot Crescent terminus of Croydon Tramlink at New Addington before the end of the 1998. In the distance, a 130 bus is seen departing for Croydon. ***Gerry Cork***

West Midlands showcase for private sector integrated transport

TRAVEL WEST MIDLANDS

David Leeder, dynamic Chief Executive of the Urban Transport Division of National Express Group and Travel West Midlands, gave this fast moving talk at the LRTA's annual meeting about his ambitions for integrated public transport. Could this be the shape of public transport in the New Millennium?



Light rail will become an important part of the Travel West Midlands business in the years ahead. Bus and tram fleet managers will work closely together - but perhaps not this close! *TWM*

National Express Group Plc (NEG) is a private company that exists to invest in and improve mass passenger transport systems. In 1992 the group became the first British land passenger transport business to obtain a listing on the UK Stock Market. Today, our employees hold around 20% of NEG's shares with the rest owned by small investors directly or held on their behalf by professional investment funds.

Although most people still associate National Express with our famous network of express coaches, our core business is in fact moving people, not running coaches. We believe that our key skills of safety management, operations, investment, planning and marketing can be applied to any passenger transport mode. In fact, rail operations are now our biggest business and since September we have also become one of the USA's major operators of yellow school buses. NEG is now one of the world's leading passenger transport businesses, operating through four divisions covering Coaches, Buses, Airports and Trains with operations in the UK, mainland Europe and North America.

Travel West Midlands

Travel West Midlands - the NEG Company that will operate the Metro - has developed Britain's largest urban bus network, with over 2000 buses running on around 500 routes throughout the conurbation. NEG is currently investing over £100 million to up-date the TWM fleet with one of Europe's biggest fleets of low-floor, easy access buses. This investment is being backed up by improvements to routes, ticketing and customer information. Overall bus ridership is now growing, after many years of decline.

Quality Partnerships

Any plan to revolutionise public transport must address buses. The facts speak for themselves: every year TWM alone carries over 330 million bus trips. This compares with around 20 million trips pa on the local rail network. Even a large-scale Metro network would only carry around 10% of this total and would take years to develop, even if sufficient funding was available.

A vigorous bus network is not an alternative to light rail: it is an essential first step towards it. Over the last few years, TWM has developed ever-closer partnerships with the West Midlands local authorities and Centro to improve the quality and quantity of transport services in the area.

Showcasing the bus

Traffic congestion is the enemy of reliable bus or tram operation. Congestion makes journeys slow and unreliable, and inflates operating costs and fares, thereby encouraging further car use. 'Showcase' is the West Midlands' formula for breaking-out of this vicious circle.

Starting with the now-famous line 33 project, the West Midlands pioneered the Quality Partnership concept with pilot schemes aiming to showcase the best in bus travel:

- Traffic management schemes which will provide faster, more reliable journeys.
- Easy access buses.
- High frequency services.
- Excellence in customer care and passenger information.
- High quality passenger waiting facilities.
- Rigorous enforcement of traffic regulations.
- Integration with other modes and operators.
- Strong branding and marketing.

There is no doubt that this formula works: the pilot Quality Partnership routes - such as the award-winning Line 33 - have shown that bus-based public transport can deliver substantial patronage increases. Passenger traffic on line 33 has grown by over 30% in less than two years, with corridor growth of around 10%. Similar schemes have since been launched in Coventry and Walsall, with the added ingredient of multi-operator corridors that blend healthy competition with pragmatic co-operation.

The success of these pilots has led to plans for a regional 'showcase' network, involving large-scale private sector investment in bus infrastructure for the first time, including the

There is no mistaking the Midland Metro tram even at night. This is a specially posed shot of tram 6, sadly without a single passenger on board because the approval for service could still be several weeks away. ***TWM***

possible development of guided busways. A Regional Quality Partnership embracing over 50 bus and rail operators, the seven district authorities and Centro, has recently been launched: NEG has earmarked £30 million for investment in cost-effective information and infrastructure projects to supplement public sector funding sources.

Where do trams fit in?

NEG's forebears include a number of tram operators, including Dundee Corporation, Birmingham Corporation, BET and even parts of the Belgian Vicinal. The Group is keen to invest in tramways and light rail systems throughout the world, either through privatisation of existing operators or through the development of new schemes. There may also be scope to improve heavy rail services by the application of more flexible, Karlsruhe-style, technology and operating practices.

Midland Metro therefore has two roles within NEG:

- To complement two of our core businesses: Travel West Midlands and sister-company Central Trains, operator of the Centro local rail network.
- To provide NEG with a pilot project for worldwide light rail.

Integrating Midland Metro with rest of the network

NEG believes that the main competitor to public transport is the private car. High quality interchange between operators and modes enables public transport to provide a more car-like service. But NEG also understands that passenger transport is fundamentally a service activity, more akin to modern retailing than the traditional view of a public 'utility'.

If we are to attract the proverbial man in the Nexus Viagra GTi we need to sell our services like any other private business. Our philosophy is to develop convenient ticketing and information systems and opportunities for convenient interchanges, allowing customers to choose where and whether to interchange. This contrasts with the traditional 'planned' network as practised in Tyne & Wear before 1986 where passengers were forced off buses to meet artificial notions of an 'optimum network'.

Our research shows that many categories of passenger - elderly shoppers, for example - will prefer a slower, through journey by bus to interchange with Metro, however convenient. Others will happily trade a change of mode for a faster, overall journey time. Parallel bus routes will therefore be retained, not least because they provide the most comprehensive range of feeder services. Where possible we are upgrading Metro feeders with Easy Access buses for seamless interchange with the trams.

Improving information

Information is the Achilles' heel of complex public transport networks. It was the initial failure to address information problems that has done so much to damage the image of the UK's deregulated bus sector. TWM and partner operators have now begun to tackle this problem.

The company has established an Internet site, colour-coded 'branded' routes are being introduced and many buses now carry 'Underground' style maps. A network of 700 information points has been set-up that includes all local rail stations.

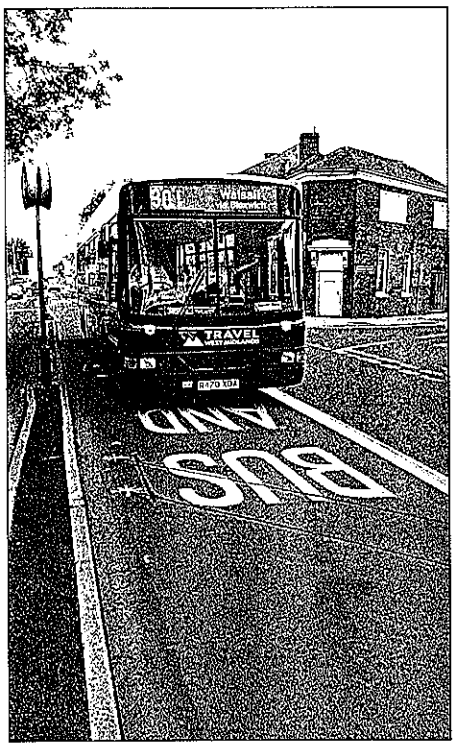
A complete review has been carried out of our printed material from destination blinds to timetable leaflets. Professional graphic design expertise has been deployed to create a clear corporate identity, with specially designed graphics and letter face. All this is backed-up by high-profile advertising, a travel card sales team and a dynamic public relations group led by Phil Bateman (the grandfather of the Midland Metro). NEG is also working with the Confederation of Passenger Transport (CPT) and Association of Train Operating Companies (ATOC) to establish a national public transport information service.

All of these principles apply equally to Midland Metro: like the buses, the trams will be 'route-branded', and Ray Stenning, the transport livery specialist, has created a dramatic system identity that blends the TWM and Centro house-styles into something uniquely 'Metro'. A huge range of graphic material is now being prepared, including fares information, system maps and user guides.

David Leeder

David Leeder joined Travel West Midlands from Exeter based Transit Holdings where he was right hand man to Chairman, Harry Blundred. Before that he was General Manager of both Docklands Transit and Portsmouth Transit and prior to that he worked for transport specialists, the MVA Consultancy, and also for British Rail where he began his working career in 1987 as a Senior Management Trainee. He studied Transport Operation and Planning at Aston University in Birmingham where he gained a First Class Degree.

David is 32. He was born and educated in Croydon, Surrey. He joined Travel West Midlands (then West Midlands Travel) in 1993 and became Marketing Director in 1995. He became Chief Executive in 1997.



Where light rail is not available - which is still most of the West Midlands - dedicated bus lanes facilitate the easy movement of vehicles at peak times. From the lack of traffic in this view, this service 301 has the best of both worlds. ***TWM***

Like selling baked beans...

TWM and Midland Metro receive no operating subsidies. Like a shop selling baked-beans, our success or failure will depend on selling tickets to willing customers and making sure that we provide the kind of value that will keep them coming back for more.

One way of helping people make the transition to public transport is to make it easy to buy tickets. Over the last few years a wide range of multi-journey tickets has been developed in the West Midlands, ranging from bus 'add-ons' to long-distance rail to specialist tickets targeted at specific market segments such as students and leisure travellers. Over three hundred pass agents have been created, including all the local rail stations. The wide range of one-day bus/rail tickets is also now available on bus, from over 2000 buses of 50 operators, serving 12 000 individual bus stops. The public transport network in the West Midlands is now probably more 'integrated' than any similar city in Europe.

These concepts will be extended to Metro to facilitate multi-mode and multi-operator journeys. Metro Ticket Vending Machines (TVMs) will sell a variety of one-day passes, in addition to single tickets, returns and special bus and rail add-ons. The scope for more ambitious joint ticketing with heavy rail is currently being evaluated.

Capturing the car user

Midland Metro is a massive investment by any standards: over £145million to upgrade just one public transport corridor. Around £130 million

A tram operation on segregated track cleans up the environment from the mess of road traffic, as this view clearly demonstrates. ***TWM***

of the capital sum has been provided from public sector sources and could equally well have been spend on health or education services. This is at least ten times the cost of providing an equivalent high-quality bus operation.

Metro is really just another Showcase corridor, albeit one that uses trams rather than buses as its basis. To justify this high level of expenditure, Metro must not only deliver the goods in terms of passenger volumes; it must carry the 'right' sort of passengers. Metro will have failed if we simply divert existing bus riders; we must attract new users and capture the 'generated' trips that might otherwise have been made by car.

Park and ride is only part of this equation. We really want the car user to park-at-home-and-ride, walking to the tram stop, or hopping on a bus. Formal park and ride already exists at The Hawthorns, and Midland Metro is working with Centro and other authorities to put together other park and ride sites.

The future

After many years of planning, Midland Metro is now on its way. It is not just a light rail system, but an integral part of a dynamic, competitive public transport market, and part of a passenger transport business which has global ambitions.

Utrecht
Improving its competitive edge

The Netherlands' fourth largest city is expanding its light rail system, as **C. J. Wansbeek** reports.

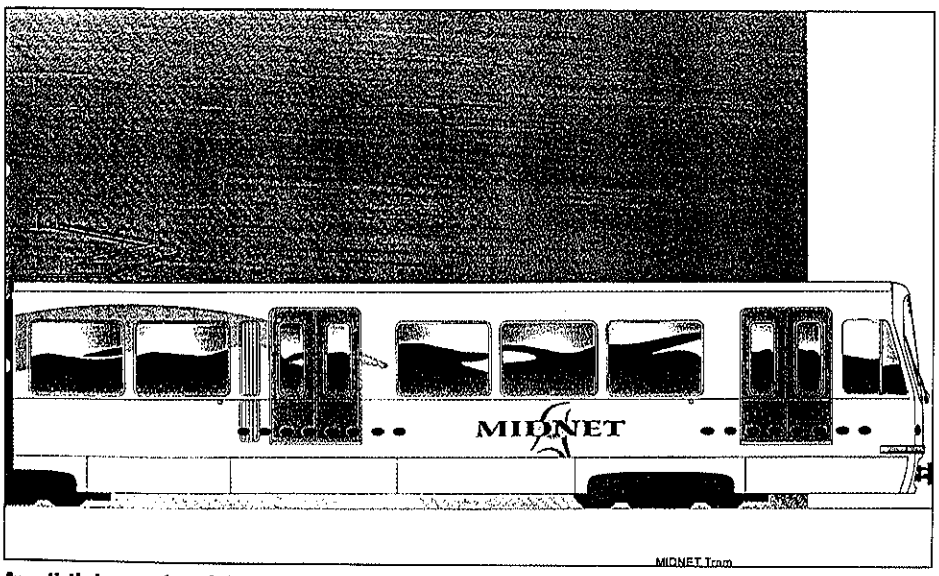
The tram terminus at IJsselstein Achterveld is set in the middle of a new middle-class neighbourhood, and is now rather cramped and rudimentary by todays standards. The yellow Midnet LRV adds a splash of colour. *C.J. Wansbeek*

The two-line light rail network of Utrecht is growing. Work has started on the first extension since revenue service started in 1983. The existing fleet of 27 trams can cope: no additional trams are needed. Recently, Midnet, the transport undertaking, took a series of measures, in order to strengthen the tram's position. Tens of millions of guilders will be spent on this.

Strategically situated in the heart of the country, Utrecht, with a population of 250 000, is Holland's fourth-largest city. This is the hub of the busy Dutch railway system. Adjacent to the CS, or main station, stands the headquarters of NS, the national railways. Crammed between station and offices is the unobtrusive two-track stub terminus of the region's *sneltram* (fast tram), a standard-gauge network with a track length of 18 km. Remarkably, there is no rail link to the nearby NS mainline system, found under the same wide roof of Utrecht CS. Yet, the Utrecht tram has a solid railway background. Much railway technology was used, for instance in the very heavy level crossings and the equally heavy overhead wires. This line was conceived as a NS commuter railway, to branch off from the Utrecht to Maastricht main line.

The new branch was to reach Nieuwegein, a satellite town with 60 000 inhabitants (a far cry from the 150 000 expected earlier). In 1974, the Dutch government decided that a light rail line would be preferable, as this would bring a much better service to the southern flank of the city of Utrecht. This resulted in the design of a circuitous alignment. A nearby township, IJsselstein (pop. 22 000), was also linked, with a branch of its own. A system in the form of a twopronged fork, tram routes 60 and 61 are largely overlapping. The former has a service length of 13.1 km, going to South Nieuwegein, the latter serves IJsselstein, with a service length of 15.0 km.

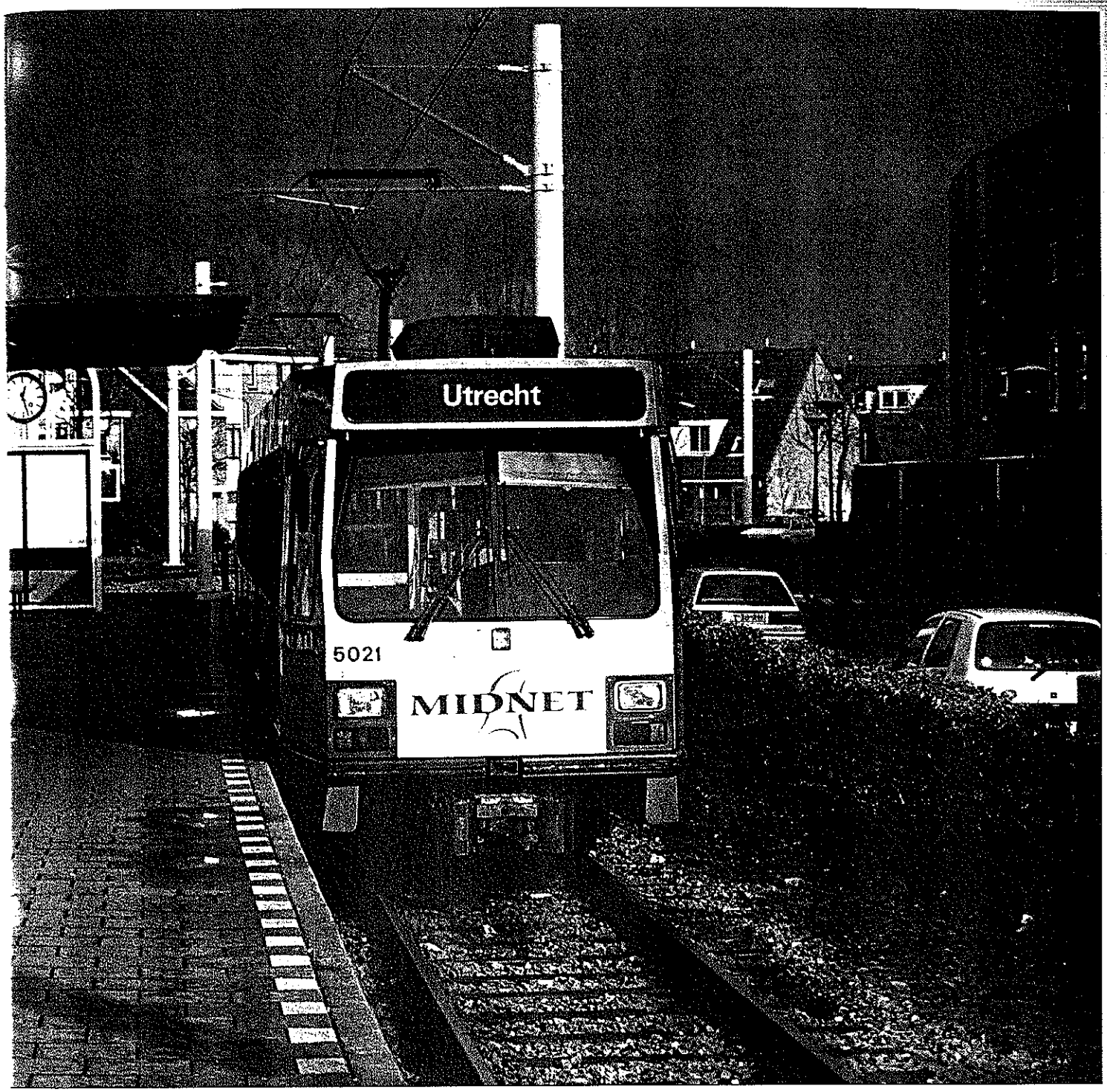
As trams speed over a dedicated light rail bridge over the Amsterdam-Rhine Canal, it seems that all private cars are clogged on busy roads. During rush hours, trams filled to capacity operate as coupled sets of two. A fast interurban tramway in excellent shape. Yet the sneltram is losing some ground. So the operator Midnet, which also owns a fleet of 1700 buses, adopted a series of measures to boost its tram product. 1999 will see the implementation of most of these measures. The approved budget for the upgrading is NLG 23 million.



An artist's impression of the rebuilt Midnet LRV after its mid-life refurbishment. *Midnet*

All 27 trams will undergo a facelift to give them a contemporary, more appealing look. The front section of all trams will be replaced by a modern-looking front. All trams will be repainted, though the choice of the new colour has yet to be decided. The interior of the trams will be totally refurbished, with new materials and colours. The existing seats will be maintained, but with new upholstery. The proportion between fixed seats, folding seats and standee places is now 80/16/120, and will be become 72/16/140, which means that 12 more passengers per tram can be carried. The static information in the tram will be improved: the route strip will be expanded with new information on connecting travel and connections to major destinations en-route. In the interior of the trams, there will be cameras to monitor the behaviour of tram passengers.

Ticketvending and validating machines will be installed inside all trams, and ticket sales by



the tram driver will be discontinued. Following the example of Amsterdam and Rotterdam, there will be automatic voice announcements of the next stop.

Under Operation Upgrading, 13 of the existing 23 tram stops will be entirely rebuilt. Four other tram stops will be thoroughly renovated. New and larger passenger shelters will be installed, with a length of between 10 and 30 metres, replacing today's much shorter shelters with a length varying between 7.5 and 15 metres. Also, new plastic seats will be installed. All tram stations will have 850-mm high platforms, exactly matching the floor height of the trams, which is 850 mm above track level.

No modernisation of the tram stops had taken place since 1983. Now it has been decided to clean up all stations, and better wheelchair access will be provided everywhere. Also, there will be electronic travel information displays installed at all stations. Video cameras will be installed at all tram stations, to increase social safety and prevent vandalism. Static information in and around the tram stations will include clear and easy-to-understand maps, which provide information on nearby locations of interest to tourists and business people alike.

Midnet is optimistic that such measures will increase the attractiveness of the tram as a means of transportation to walking routes, camping sites and other leisure areas, all of which abound in this part of the Utrecht province. The upgrading of a number of tram stations will be postponed to a later date, as this will be done within the framework of an overall programme to improve living conditions in a number of neighbourhoods in Utrecht city.

The Dutch government wants to keep big cities as decent and attractive as possible, to prevent urban areas developing into ghettos. To this end, billions of guilders have been earmarked and in 1998, for the first time, the post of Minister for the Improvement of Cities was created, a new key member in the Cabinet of Ministers. The city of Utrecht is high on the list, and several sneltram stations will undergo a major overhaul under this framework. This concerns the to following stops: Moreelsepark (city terminus), Centrum, Westplein, Graadt van Roggenweg. Also, the town centre of Nieuwegein is being renovated with State money, and from this, the *sneltram* station Nieuwegein City Plaza will soon benefit.

Four tram stations are less in need of renewal. These are the four stops south of Nieuwegein town centre. ~ Financing for the sneltram upgrading has been obtained in a creative manner by Midnet. 65% of costs are covered by BRU, which stands for the treasury of the province of Utrecht, which is fed by State money for activities in the transport field. In the case of the sneltram upgrading, BRU in turn is fed from GDU, which stands for Concentrated Target Group Financing. Until recently, such expenditure would have been covered by the Ministry. But following EU practice, the Netherlands is rapidly decentralising transport responsibilities. The remaining 35% is from Midnet's own sources. Midnet in

turn can earn this money back from BRU, on the condition that it manages to increase income from ticket sales.

Now that the upgrading of the line is in good hands, a serious problem encountered is the gradual decrease of commercial speed. A paradox, as the line is all on reserved track or private right of-way. Yet trams move more slowly than before. This is caused by the tram's growing popularity within the Utrecht city limits. Over the last decade, many new office complexes have sprung up in South Utrecht. Investors decided to build them close to the tram stops, in particular along Europalaan. Thousands of commuters and neighbourhood dwellers rely on the tram. This tram, it should be added, runs on time, and the schedule is reliable (this is Utrecht, not Amsterdam). Today, over 50% of all Utrecht tram travel is on the five-km section within the city boundaries.

Total ridership on the entire Utrecht *sneltram* system on average weekdays is 36 000. The constant growth in patronage makes loading and unloading more time-consuming than 15 years ago. So Midnet will install 'ding-dong' sounding speakers at all car doors, in order to motivate passengers, and the doors will open and close faster. The audible system should bring six-second savings per stop, resulting in a two-minute gain over the line's full length. The trams, now aged 15 and thus in their mid-life period, will be thoroughly overhauled and refurbished. These trams were inspired by the German Stadtbahn-B type. Based on the Stadtbahn-B concept, the Utrecht trams were custom-built by Swiss SIG (now part of Fiat Ferroviaria). The Utrecht trams were numbered 5001-27, integrated into the NS numbering system, and ever since, fleet numbers remain unchanged.

The Utrecht trams in turn inspired Spanish CAF/Macosa, which, in the late 1980s, delivered articulated trams 3701-40 to the regional network at Valencia. The Valencia trams seem carbon copies, but riding on 1 500 volts and equipped with chopper control, they differ electrically from the Utrecht cars.

Several plans existed to extend the Utrecht tramway network. There were also plans to create a separate urban tramway system. In 1992, a proposed 10-km tram line from Utrecht to the university campus in East Utrecht was wiped off the table after prolonged political quibbling that, in passing, brought an abrupt end to several political careers. After that, politicians killed a plan to build a 6-km tramline from Utrecht to Leidsche Rijn, a future satellite township.

Equally frustrating was the defeat of plans to extend the Nieuwegein branch via a bridge to Vianen, another 'new town', at the other side of the broad river Lek. And now, in 1999, there is all of a sudden the line's first extension, being built at a spot where no one would have predicted it. Since September 1998, work is in progress to extend the IJsselstein branch with 2.5 km of new double track to Zenderpark, another 'new town' now nearing completion. The new stretch, due to open in 2000, will be a dedicated light rail corridor, for maximum speeds of 70 km/h. The Zenderpark extension is being built following of decision by the Province of Utrecht. The province is under pressure to build new towns, as part of the national scheme to build two million new dwellings before 2010. The rural area south of IJsselstein was seen as the most suitable area for a new town in this already overpopulated Province. Part of the decision to build this new town was the agreement to extend the tram to it. This caused some confusion at Midnet. There is already a Midnet express bus starting near Zenderpark, which it takes only 18 minutes to get to Utrecht CS. Following a straight line, the express buses rush along reserved lanes on the A2 highway. On the other hand, from Zenderpark to Utrecht by tram, over the circuitous light rail line, would take 42 minutes. So Midnet is now hard at work to do both: (1) to complete the Zenderpark rail extension; (2) to reduce tram travel time from 42 to 33 minutes.

The Province's decision to extend the tram line triggered another operation: the modernisation of the tramway network over its full length. After extension to Zenderpark, the IJsselstein line will no longer be the Cinderella. Instead, this line will become the backbone. The Nieuwegein branch, currently the busier one, will henceforward play the second fiddle. south Nieuwegein will no longer see through service to Utrecht CS. Instead, a local tram service will be introduced between Nieuwegein junction and south Nieuwegein. This is one of the measures prepared by Midnet to boost the speed of Zenderpark to Utrecht trams. Costs of the Zenderpark extension, NLG 20 million, will be paid from the proceeds from the sale of land to the future house owners of Zenderpark. This will be arranged by the local government. The Ministry of Transport is not involved in the actual construction, as the Zenderpark extension does not qualify as a 'national' project. Fortunately, running costs will be partially offset by State subsidies.

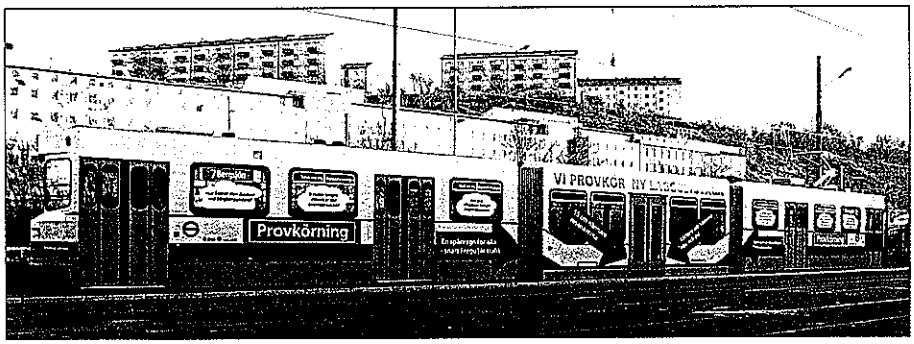
To offer a better product to its passengers, Midnet will revise all sneltram schedules, by guaranteeing a direct interchange with all of the frequent NS Intercity expresses at Utrecht CS. There are plans to rebuild the tram terminus in the form of a subway below tracks 4 to 11 of Utrecht CS.

Equally exciting are NS plans to add new tracks to several main lines in the Utrecht area, for co-use by Karlsruhe-style dual system LRVs. Already, the Ministry of Transport has set aside the equivalent of NLG 40 million to prepare new mainline tracks for shared use by dual-voltage LRVs in and around Utrecht. So in the near future, no one should be surprised to see LRVs on NS main line tracks at Utrecht CS, while at the same time, in the subway below the NS platforms, there are Utrecht to Nieuwegein LRVs waiting for their passengers.

The author thanks Bert Takman and Hans Snel, both of Midnet management at Amersfoort (Netherlands), for their kind assistance with the preparation of this article.

The light rail alignment in the Beneluxiaan, south Utrecht, now the most heavily patronised stretch of the system. Note the heavy overhead, built to railway standards. ***C.J. Wansbeek***

The start of work on the extension from IJsselstein to Zenderpark in November 1998, as piling takes place on the future alignment. ***C.J. Wansbeek***



Gothenburg trams extended

Gothenburg's M21 light rail vehicle is now ten years old, and it is time to refurbish the vehicles. About two and a half years ago, the traffic and public transport authority and operator Göteborgs Spårvägar AB decided to make the M21 accessible for the disabled and to increase the capacity. After a thorough examination of the technical and economic conditions, German manufacturer Mittenwalder Gerätebau (MGB) was given the order to modernise the M21 by adding a 30% low floor middle section.

The M21 vehicle 216, pictured here, has received an 8.66m middle section, renamed the M31, and renumbered 316. It is the first middle section with the width 2.65m built by MGB. The chosen construction allows a very long low-floor section compared to other builds. The weight increases from 27 tons to 33, but still less than other types. One reason is that the middle bogie in the M21 is replaced by separate wheels in the MGB vehicle. The braking power is also increased. Capacity is increased by 60 passengers - the M31 will now be capable of carrying 202.

After testing the M31 prototype during the autumn and winter season, a decision will be made this spring, whether to take up the option to build another 19 to 79 low floor middle sections. If so, a number of older four-axle trams can be replaced because of the increased capacity available. The M31's length and capacity will be compatible with the planned new M32 light rail vehicle, for which the functional specification is almost completed. It will go out for tender during 1999.

RAGNAR DOMSTAD,
Development Director, TPTA, Gothenburg

Nantes goes for evo

By **John D. Swanson**
Centre of Expertise for Light Rail Vehicles, ADtranz

Like so many cities worldwide during the 1950s and 1960s, Nantes closed all of its old-fashioned tram network (in January 1958). But the 'more flexible', buses did not solve traffic congestion problems and public transport continued to decline. In the 1980s Nantes was the first French city to respond to the government's call for fixed-track transit systems in the larger conurbations, and led the revival of tramways in France. 1985 saw the inauguration of a new 10.6-km tramway served by a fleet of 20 Alsthom six-axle articulated trams; these high-floor vehicles were 28.5 m long, 2.3 m wide and could carry 168 passengers.

They were the first new trams to be built in France for 25 years. Under the umbrella of SEMITAN (*Societé d'Economie Mixte des Transports en commun de l'Agglomération Nantaise*), the local semi-public transport operator, bus and tram routes were restructured to form an integrated network, offering quicker and more effective public transport.

This tramway revival was so successful that within three years eight more trams had to be delivered to meet demand, and a second line was soon built, with yet more cars delivered in 1991/2. This time the new trams were 39.15 m long eight-axle trams incorporating a low-floor centre section, allowing 246 passengers to be carried. The earlier vehicles were soon modified to also received the fully-accessible centre section, and today 46 eight-axle cars serve the two-line network. This has reached 27 km with 54 stops. Encouragingly, the tramway carries nearly 40% of the passengers using public transport in the city.

By 1998 the time was ripe for further expansion, and the planned third new line from Beausejour to Lion d'Or (plus further extensions to existing lines) was given the green light. To operate this additional route more new vehicles, and Nantes went out to tender, this time on a pan-European basis. When the tenders were evaluated, Nantes chose to go the route of evolution, not revolution, with an order for 23 full low-floor vehicles from the ADtranz Incentro family (and with an option for 16 more). The new vehicles will offer significant advantages, especially in the areas of capacity, image, weight, flexibility and proven design.

The Incentro type **AT6/5L** double-ended vehicle for Nantes is a 36.4 m long, 2.4 m wide, 100% low-floor, five-section vehicle with a passenger-carrying capacity of 76 seated and 184 standing (4 passengers/m^2). The total of 260 passengers gives a 6% increase over the existing Nantes tram design, but in a shorter vehicle.

Image is a very important element in today's cities as public transport takes on a new importance in the social fabric. Gone are the days when an ugly, functional, 'box on wheels' was enough - Strasbourg changed that forever. Today customers expect style and individuality - the Incentro family was designed from the start to provide that choice. For instance, Nantes chose from among several Incentro cab designs provided by the well-known French design house Avant Premiere of Lyon to get exactly what they wanted.

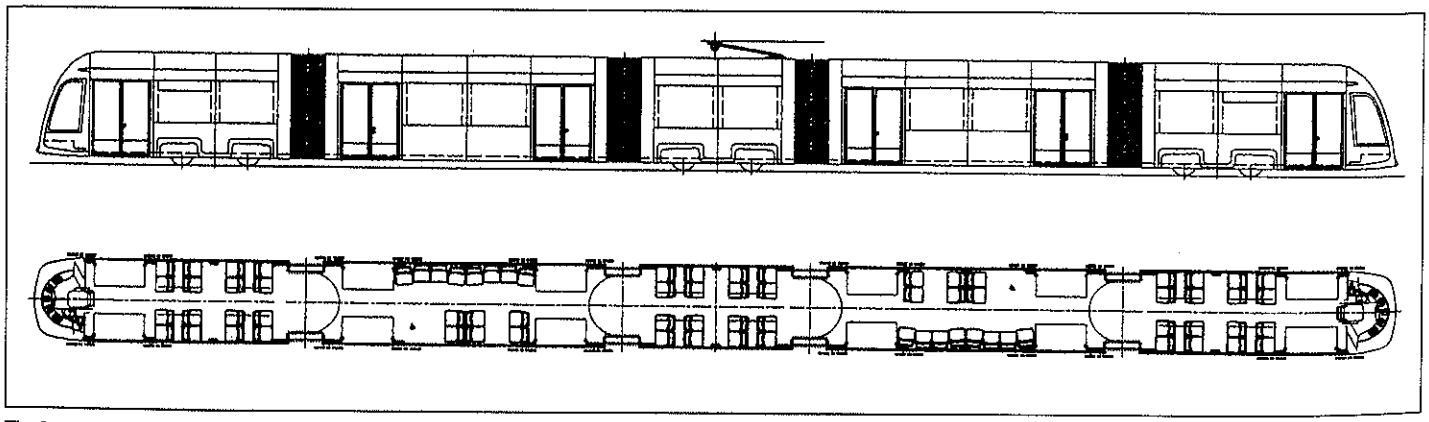
Weight is always an issue with vehicle operators, due to its impact on operating costs, yet is seldom addressed very seriously in vehicle design. It is especially important in terms of life cycle costs, both as regards energy consumption and wear and tear on the infrastructure. The Incentro is expected to weigh in at around 33 t, a one-third saving over the existing 52 t car, representing a considerable saving.

Flexibility in design cannot be over-emphasised. Traffic demands change over time, and with a vehicle that is expected to be in service for over 30 years, the ability to change with changing conditions is paramount.

The Incentro design offers this in terms of overall length (vehicles can be made longer or shorter); door/window positions (these can be readily changed without affecting the vehicle structure); modular sub-systems/fittings (these can be rearranged or replaced with higher-performance units). In short Incentro is a vehicle which is designed to change with the times and not to become obsolete.

Competence in design and manufacture is also important. Over the last 10 years ADtranz has had three successful 100% low-floor vehicle designs on offer: the Eurotram (ordered by Strasbourg/Milano/Porto/Nottingham), the GTx series (Berlin and other German cities) and the Variobahn (German systems, Sydney and Helsinki). With sales of over 645 vehicles for 19 cities worldwide, and more than 35 million km of operational experience, they have always been one of the worlds leading suppliers.

But the world moves on, and with it new global requirements such a flexibility, comfort, value-for-money and better aesthetic design



The Incentro design - as presented by ADtranz.

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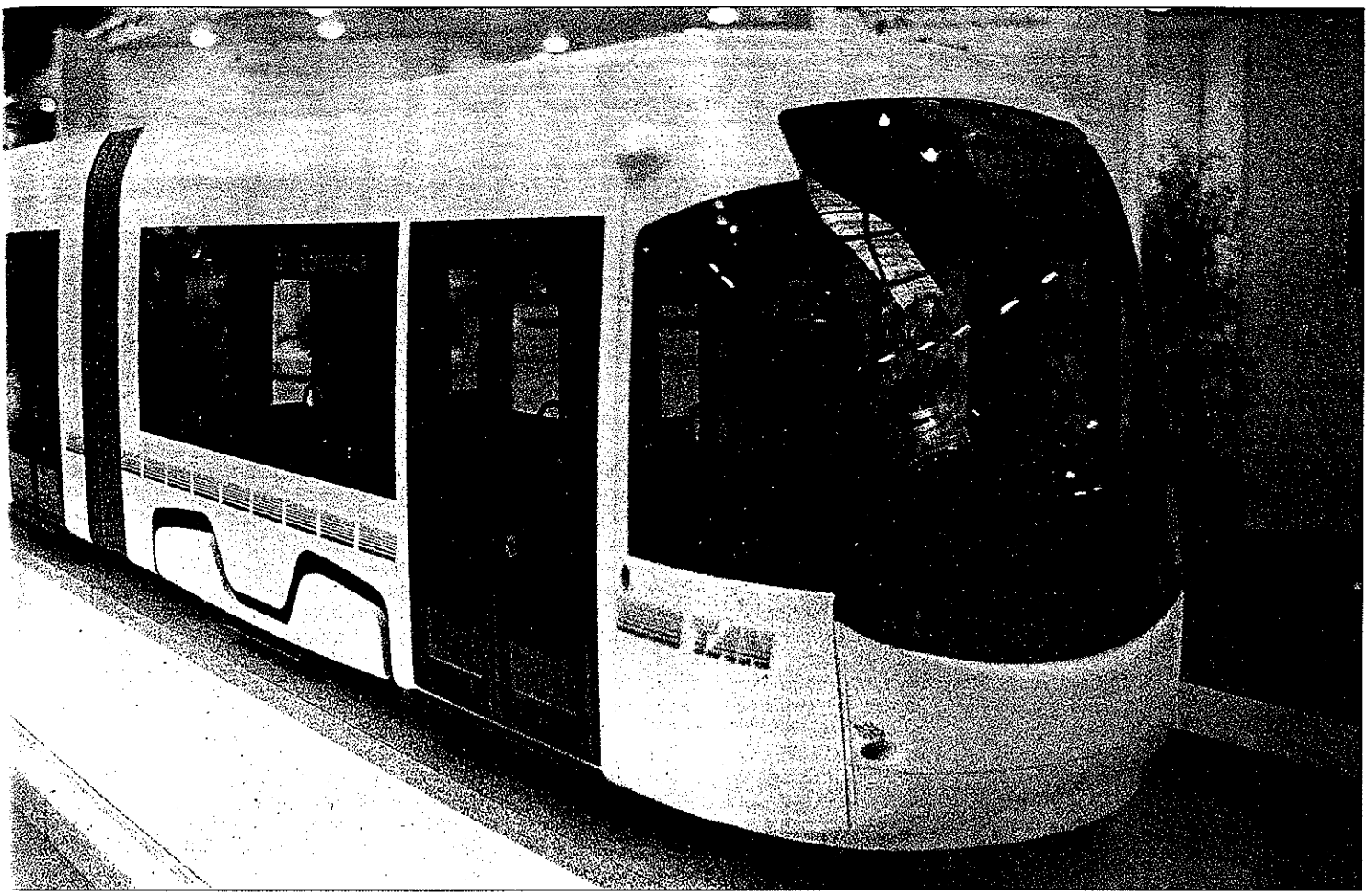


A model of the ADtranz Incentro tram on order for Nantes. ***J. C. Vaudois***

have become more important, with existing designs no longer necessarily meeting customer's needs. ADtranz chose to evolve a new vehicle platform based firmly on these needs, utilising only the best tried and proven technological solutions from existing designs - the Incentro vehicle family is the result.

An extraordinarily flexible design, the Incentro carries modularisation to a new level, with well-defined interfaces, allowing customers a high level of choice, while retaining all major component parts as standard elements. Six basic vehicle lengths, ranging from 18.8 m to 50.6 m long, make up the basic family, with passenger capacities varying from 98 to a whopping 371 people per vehicle. Vehicles are also available in three widths, 2.3 m, 2.4 m and 2.65 m, and two track gauges, standard and metre. Depending on the customer's operational needs, either single or double-ended versions are available, as well as a variety of bodyside door positions.

A standard cab interface allows each customer to have his own unique style of cab design, under taken by the ADtranz design partner, Zagato Design of Milano, or a designer of their choice. This styling choice extends into the passenger area as well, with many seat styles and arrangements being available. Depending on operational needs, the vehicles can also be provided with between 50% and 100% axles powered.

The heart of any successful vehicle is always the drive system, and the Incentro is no exceptions. Accumulated wisdom maintains that the closer a vehicle's drive system is to a traditional power bogie, the less problematic it will be in service. Following this, rather than attempt to create yet another exotic drive solution, ADtranz has chosen to stay with the more traditional bogie frame, using successful elements from all three of its existing low-floor solutions.

The Nantes car has two power bogies and one trailing bogie, a 25% reduction in wheels/bogies to maintain compared to the current eight-axle trams. The power bogie is a symmetric version with all four wheels independently driven using four combined motor/gearbox/hydraulic brake wheel drive units evolved from the Eurotram design, mounted on a common bogie frame. These drive units are standard throughout all vehicles, and use a well-proven nose-suspended 45 kW (nominal), 6400 rpm, fully-enclosed, water- cooled, asynchronous three-phase ac induction motor, working through a 1:8.75 right angle gearbox to drive a 660-mm diameter resiliently-mounted wheel. Secondary suspension is via steel coil springs, supplemented by elastometric elements (for crush load conditions). Magnetic track brakes are provided. The trailing bogie uses the same elements, but without motors and gears.

The latest HITRAM water-cooled IGBT traction inverters are provided (two per vehicle) with regenerative braking and braking resistors for electric braking. MITRAC vehicle train control units minimise interconnecting cabling through greater use of control bus technology than earlier systems. As always, a comprehensive suite of fault diagnostics is also provided.

The basic bodyshell framework of welded stainless steel is based on the Eurotram structure, modifted in the roof/cantrail area to accept a composite roof developed for the second-generation GTx vehicles. Three out of the six standard Incentro bodyshell types are used in the Nantes vehicle, the four-bay driven, the two-bay non-driven, the three-bay driven with cab, all using common profiles. The structure is designed to meet a 350 kN buffing load without any additional bodyside shear panels (except directly above the bogies), giving the flexibility to place doors and windows where best suited.

Doors and windows are constructed as individual, completely-finished modular composite panels which are bonded in place. For the Nantes car, the completed vehicle is configured for bi-directional operation with six double doors per side, each with an entry height of 285 mm, maximising accessibility and passenger flow. Passenger comfort features include full air conditioning (for both driver and passengers), easy and safe passage with wide aisles, a 350-mm high floor throughout, and ergonomically-designed seats.

With first deliveries expected in the first months of 2000, Incentro looks set to usher in a new millennium for passenger transport in Nantes.

Runcorn Let that be a lesson!

Light rail campaigners should take heart from this sorry experiment in the North West, where a 30-year public transport plan can only be described as a flop. **Professor Lewis Lesley** of Liverpool's John Moores University provides interesting analysis.

UK Deputy Prime Minister John Prescott's recent transport White Paper imagines a future where car owners will switch to buses. While people seem to be willing to convert to light rail, the performance of the 30-year Runcorn Busway project is a severe test for his policy of low-cost investment.

Current debate over future transport policy has generated a high level of public awareness on environmental problems caused by high levels of private car use. Most politicians and transport professionals agree car use cannot be restrained without an acceptable alternative of public transport. Many argue that existing bus services can be enhanced to provide such an acceptable public transport service.

Runcorn New Town is thought to be unique in the world in being built around a high quality public transport service. The Busway was built with eventual light rail conversion in mind, but this is never likely to happen. Bus use in Runcorn is little different from similar sized towns having traditional services operating on public streets.

Bus use in Runcorn has fallen in line with the growth of UK car ownership. There is no evidence in Runcorn or elsewhere that car users can be attracted in a systematic or sustained way to bus use. To attract local car journeys to public transport probably needs a completely new product rather than a technical fix to bus services.

Imagine a town not only where buses are the main mode of public transport but also where the town has provided a special network of Busways and reorganised the urban fabric so that no one is more than 400m from a bus stop. Imagine such a town being the model for John Prescott's bus future!

Studying Runcorn, it should therefore be possible to determine if a bus-based public transport system can win commuters out of their cars. Not only do buses operate at an average service speed (30 km/h), twice as fast as traditional city systems, but the road network has also been designed to make car journeys longer and slower than by bus.

As private car use has increased, bus use has declined. Compared to the maximum bus traffic carried in 1955, bus use had declined in absolute terms by 65% by 1996, and in relative terms by 85%. In 1955, buses carried 40% of all passenger traffic in the UK, while by 1996 the modal split had fallen to 7%. Although the decline in urban areas has not been so severe, buses nonetheless now carry a minority of passenger traffic in all urban areas. Even in London, bus use fell from 5000 million passenger journeys to 1100 million in the same period. A third of UK bus passengers are now carried on London's buses, although 65% of passenger journeys in the City are made by private car.

Another boost for fixed track lobbyists is the fact that Underground use has increased, only partly explained by the Victoria and Jubilee Line openings. The consistency of the Underground, insulated from road congestion, may offer a partial explanation. The UK bus industry has also declined due to external factors and possibly the way it has managed its resources.

Runcorn (population 85 000) was designated a new town under the New Towns Act 1948 in 1964. Earlier new towns such as Stevenage, Crawley, and East Kilbride were largely based on the planning assumption that most people would want to travel by car. In Runcorn the Master Plan determined that public transport would form the backbone of the structure of the town and meeting traffic needs. The Busway is a figure of eight around which new developments are clustered.

No Runcorn resident is more than 400 m from a Busway stop, many of which were built to rapid transit standards. At the intersection of the figure of eight route, the new town centre is located with a concentration of retailing and services. In contrast, the road network is much less direct. The Master Plan set a target that 50% of journeys to work should be made by bus, far higher than achieved in any equivalent sized British towns.

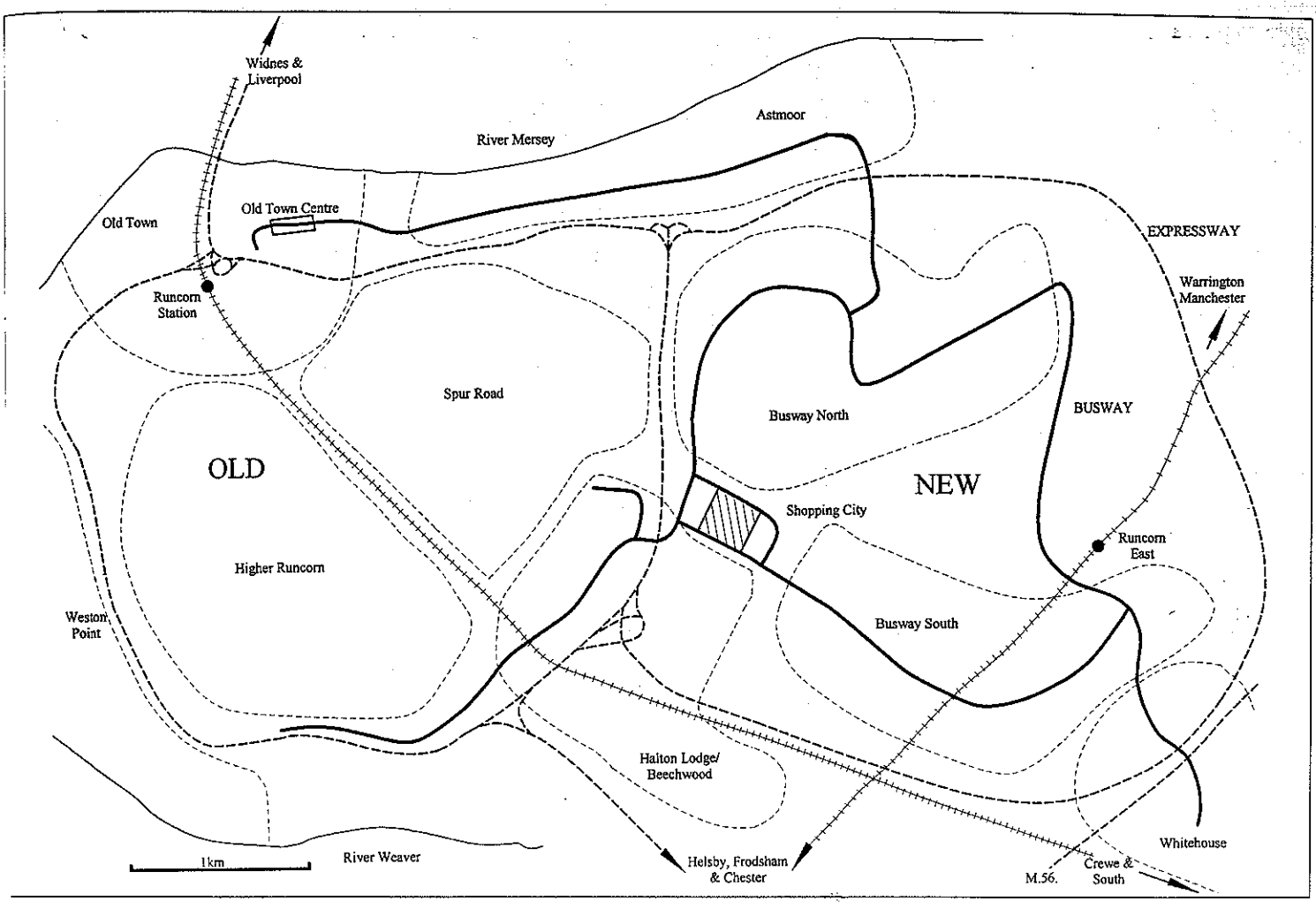
Busway vehicles are scheduled to run at a maximum speed of 40 mph (65 km/h) and all crossings of the new town road network are either grade separated, or controlled by traffic signals pre-empted by buses to provide non-stop crossings. This means that service speed is nearly 20 mph (32 km/h), nearly twice as fast as typical urban bus services in other towns.

To save on construction costs, all Busway structures were designed for single deck vehicles. The Master Plan assumed that as the population of Runcorn increased, the success of the Busway would soon lead to capacity problems. It was therefore designed for easy conversion to trolleybus or light rail operation.

Below: Would light rail have fared any better? The dedicated Busway stops, no more than 400 m from any household in Runcorn, now have a distinctly down-at-heel appearance after 30 years of continuous use. ***Lewis Lesley***

Table 1 Mode of Travel by Purpose of Journey in 1979

Purpose of Journey	Method of Travel Walk	Cycle	Bus	Driver	Passenger	Taxi	Other
Work	16%	4%	16%	45%	14%	1%	3%
Education	49%	–	44%	1%	5%	–	1%
Shopping	39%	1%	25%	20%	13%	–	2%
Social	34%	2%	10%	27%	12%	1%	2%
Medical	40%	–	22%	21%	11%	–	–
Escort	32%	–	3%	41%	10%	1%	1%
Pers. Business	35%	1%	18%	30%	14%	–	2%
Recreation	48%	3%	6%	20%	19%	2%	2%
Total	**34%**	**2%**	**15%**	**29%**	**15%**	**1%**	**2%**



Above: The figure of eight layout of the Runcorn Busway shows how well the town is served by public transport, with a direct link to the main railway station and shopping centre.

There was a short period in the late 1970s when a prototype electric Leyland National Bus was operated. This involved the use of detachable battery trailers to overcome the short mileage available from battery charges. This electric bus, in a red livery compared to green of the Busway fleet, was popular with passengers, for two particular reasons. Firstly the electric National was much quieter than the rest of the fleet. It was also much smoother in acceleration and braking compared to the diesel engined fleet. Indeed some evidence suggested that passengers waited for the electric bus, letting diesel buses pass. In operational terms a 9-tonne battery trailer on a 8-tonne bus created some problems. The bus could not reverse easily and needed to come off service to exchange battery trailers in the depot.

The new town was built to support the Busway. Housing, footpaths and facilities are clustered around the Busway, and no home is more than 400 m from a stop. The Busway was substantially opened in 1967 and completed by 1975. Has a bus service better than anywhere else in Britain resulted in different behaviour compared to other UK towns? Can the experience of the Busway inform the current debate, which appears to believe that quality bus services, whether physically guided, or as in the Runcorn Busway - driver steered, will attract motorists from their cars?

Many commentators seem to believe that the application of guidance technology is a necessary and sufficient condition for the substantial improvement of bus services, and considerable resources have been devoted to the development of guidance technology.

The oldest - kerb guidance - originally developed in Essen was first tried seriously in Birmingham, where a one-mile (1.6 km) track opened in 1984. to be abandoned two years later as a result of bus deregulation. Kerb Guided Busway (KGB) is still the widest used system - with a major installation in Adelaide in Australia. There are short sections of KGB in Ipswich and Leeds.

Cable guidance originally developed for service vehicles in the Channel Tunnel was demonstrated for buses in Newcastle-upon-Tyne in 1996. The low cost of the guidance system is however overwhelmed in most streets, where highway pavements will need reconstruction to prevent premature failure from bus wheels continually running over the same part of the road. This so-called 'tracking' was a major cost issue in London's early kerb separated contra-flow lanes, where pavement failure within six months of the Tottenham Hale lanes meant total reconstruction was required.

Other forms of guidance including slot and rail, (e.g. Bombardier's GLT) have also been demonstrated. All however have driver-steerable rubber tyred vehicles which run partly on dedicated tracks and partly on public roads.

Table 2 **Origins and Destinations of Journeys made by Runcorn Residents**

From	To		
	Old Runcorn	New Runcorn	External
Old Runcorn	31%	8%	6%
New Runcorn	8%	30%	5%
External	6%	4%	3%

77%

Table 3 **Runcorn compared with UK**

Since 1979 car ownership and use in Runcorn has increased. Following the national trend Busway use per capita has fallen from 187 per annum to 95 per annum in 1996 (50% decline). These figures compare to bus use in Britain of 126 per capita per annum in 1979 and 75 on 1996, a 40% decline.

Table 4 **Runcorn Bus use compared with UK**

	1979	1996
UK Bus use per annum (million journeys)	7100	4383
Runcorn per capita	187	95
United Kingdom National per capita	126	75

The Runcorn Busway opened with frequent (five minute) interval and self contained services. All buses served the new town centre, some served just one loop of the network, others the complete Busway including the railway station and older part of the town. With bus deregulation in 1986, Runcorn's routes have tended to become linked to longer distance services, e.g. Liverpool, Warrington and Chester. This makes service reliability within Runcorn more difficult to assure, although in the peak means there are 30 buses/hr or more over key sections of the Busway.

Originally, the Busway service was operated with a dedicated and specially liveried fleet of vehicles, and a team of local drivers who established local loyalty with residents, therefore creating a considerable degree of customer satisfaction.

In 1979, a comprehensive transport study was undertaken in Runcorn. this consisted of a household travel diary survey, bus use survey, rail survey, and targeted discussion groups. The aim was to identify public transport use and unfulfilled travel needs. Particularly targeted were teenagers under 17, housewives with small children in one car households and pensioners. It showed that car passenger trips outnumbered bus trips, even for journeys wholly inside Runcorn. Table 1 sets out these results in more detail.

Geographically, the majority of trips made by Runcorn residents were internal to the town (77%). Indeed the two parts of the town (old and new) were somewhat self-contained, with the majority of trips by residents in each area being to destinations within that area. Residents made an 3% of all their trips totally outside Runcorn. This analysis is shown in table 2.

In 30 years, there has been a spread of damage and vandalism, worsened by a downturn of the Runcorn economy, which has led to many of the stops and stations being avoided because of their poor structural state. The present peak service frequency of bus services on the Busway is over 20 per hour. In 1985 a second Busway link was opened through the town centre, enabling a bus station to be accessible from either end of the town centre precinct. No other capital investments or infrastructure enhancement have been made since.

Since national bus deregulation took place in 1986, it has been somewhat difficult to obtain detailed and reliable figures relating to bus usage and bus services. However it is understood that after new commercial services began, the competition between the major operators has been at the margins. Comparing the indexed traffic and service provided gives an interesting insight to the continuing decline of bus use in Runcorn.

What is particularly telling is that although there has been nearly a 10% overall decline in passengers carried in this period, the decline in people carried per bus mile operated has been more severe, nearly 40% lower than in 1988. This reflects an over-provision of service compared to the traffic willing to use bus services. During the period covered by table 4, passenger volume grew in the first two years responding to increased services operated, and then declined, in spite of further increases in services operated, until 1996 when over twice as many bus miles attracted only 4% more passengers than in 1988.

Overall, this table demonstrates that increasing bus miles operated did not stem the local and national decline in bus use. On present traffic levels, capital investment to convert the Busway to trolleybus or light rail would seem to be highly unlikely, unless as a result of national policy or funding to solve environmental or pollution problems. On the other hand Runcorn has invested in cycling facilities - originally to improve safety by diverting cyclists off the urban motorway standard road network.

In spite of the high quality Busway system, bus use in Runcorn has fallen faster than national trends. Indeed, bus use per capita in Runcorn is only 20% higher than UK British average. The experience of Runcorn ought to inform debates in the country over the future of urban public transport. Those who argue that enhanced bus quality can be the basis for a strategy of diverting car use should carefully examine the evidence.

The implications of this is that there may be a generic quality, or image of bus services, which is not greatly altered by means of technical enhancement. Car users appear to have strong preconceptions or misconceptions about bus services. Recent experience in Leeds with a guided bus service has shown a growth of passenger traffic. Nevertheless only about 8% of users had a car available and chose to use the bus service instead of driving.

The substantial national decline in bus use, and especially compared to the local travel market, means that services as a product may be in the terminal decline phase of the classic product life-cycle. There is little experience of other service products being successfully relaunched at such a late stage of their life. The bus industry may therefore not be capable of being saved, given the present hardware available and software presentation. If the bus industry is to continue to serve the local urban travel market, it may need to consider adopting a completely new approach.

A Busway vehicle rests on depot where a tram could have been been. This picture is dated 1977, before deregulation, when a dedicated fleet with clearly marked logos was available. ***Lewis Lesley***

Table 5 **Runcorn: Recent Bus Trends**

Year	Passengers carried	operated Bus Miles	Passengers/ Bus Mile
1988	100	100	100
1989	126	125	100
1990	140	138	101
1991	122	143	85
1992	108	151	72
1993	116	153	76
1994	108	159	68
1995	112	185	61
1996	104	218	48
1997	89	145	61
1998	94	145	65

References

(1) Runcorn - a rapid transit new town. 'New Towns explore old transit ideas.' L. Lesley. Mass Transit, September 1982, Washington DC.

www.lrta.org JOIN OUR INFORMATION TEAM!

The LRTA's website is still growing, with more information in the Manchester Metrolink pages and more links to other sites. To enable this progress to be maintained we need volunteers to produce and maintain pages about their own cities.

The production of the *T&UT* and the website meetings have been combined. See the Noticeboard page at the back of this issue for information on where to send meetings details.

By the time you read this, the website may have changed ISPs (Internet Service Provider). This is to enable the continuing improvement of our service. It is hoped that the change will appear seamless to visitors but there is a possibility that some problems will occur.

If you are having problems, always try for the home page at *www.lrta.org* If you have been using *www.lrta.org/index.htm* as suggested last month it is possible that *index.html* might be needed in future.

Brian Lomas, Webmaster, www.lrta.org

Nanny knows best

Whitehall still knows best what's best... Motorists will have to rediscover their legs... And for a mystery tour, try to unravel the fares structure of your local rail service!

British readers are well accustomed to the arrogance of national governments which believe that they are the fount of all knowledge and judgement - put simply 'Nanny knows best'. Overseas readers with more sophisticated systems of government than the fundamentally feudal UK system which holds all power at the centre may, with justification, wonder at a system where virtually all decisions are taken in Whitehall and decision makers genuinely believe the localities are incapable of taking sensible decisions for themselves.

The New Labour British Government led by Tony Blair came into office vowing, amongst other things, to change this concentration of decision-making, and hence power, in central government. Two recent revelations show that less than two years later nothing has changed.

The first is that in commenting on his consultation document on the proposals for road-user and workplace parking charges, Deputy Prime Minister John Prescott is reported as saying that spending on improving local transport will depend upon him agreeing that there are worthwhile transport projects to be funded. So, localities, through elected authorities, continue to be supplicants - shades of Charles Dickens: "Please Mr Kindly Prescott, can we have this better bus/tram/train system and pay for it with a local tax on road users and companies which provide parking spaces for employees at their premises?". "No" replied grumpy Mr Prescott, "because you have not satisfied me, who knows better than you what is good for you."

The second is hypothecation. This word, which according to my copy of the Shorter Oxford English Dictionary means 'pledging as security or pawning' is the current 'in' word in British transport finance circles and it is now said to mean assigning revenue from the new congestion charges and workplace parking tax to be spent on the particular predetermined purpose of improving local transport rather than to just go, as practically all other taxes do, into a a general bucket which the national Treasury controls. It looked too good to be true and the consultation document confirms that this is so - it is too good to be true! In fact, the assignment of revenues for local authority transport projects is only to be for ten years and the Secretary of State will be able to make regulations as to the use of the tax revenues for other purposes after this. So, in reality, hypothecation means "spending the new local tax revenues on purposes the national Government decides on/directs - which might not be transport at all after the first ten years." Brilliant!

No matter that, say, a new tramway system, as a major capital investment will need to be financed over a 30 year period, the revenues from congestion charges and workplace parking tax are only assured for ten years. What will this mean? Only schemes which can be repaid within ten years will happen. Just when we thought we could see light over the horizon promising a new dawn for integrated transport in Britain we find that we have got confused - it's actually the dying rays of the sunset of the first few UK light rail schemes.

Do motorists have legs?

Back in the early days of the LRTA - one of its two founding fathers - Jay Fowler - put his practice where his principles were. He would never travel on any form of motorised transport other than a tram or train. Not even a bus, and certainly never a motor car. Well, of course, it's true to say that if we were to follow his principles now, most of us would have a pretty thin time of it.

But to what extent have we (nearly) all become hopeless hypocrites? I'll put my hand up for one - two gas guzzlers in the garage make me feel personally responsible for at least 1 deg Celsius of global warming and whole hospitals full of asthma victims. But when I walk, or cycle, as I (nearly) invariably do, to my local shopping centre and library - roughly a kilometre away - how many fellow pedestrians or cyclists do I see? Not a lot! How many cars? So many, it is hazardous and time consuming to cross the shopping street from one side to the other, despite the fact that it is not a main or through road. Some cars, it is true, may be on the way to, or from, places further afield - but many are not - they are undertaking journeys, for speed or out of laziness, or, more likely, sheer habit, that could so easily, and nearly as quickly, be walked or cycled. If wasn't for the amount of motor traffic, it would be healthier to walk or cycle too.

Unless you happen to have a bus or tram stop or metro or rail station outside your house, the reality is that every journey by public transport starts and finishes with a walk of up to half a kilometre. I suspect that until people will quite happily walk or cycle a one kilometre journey, the chances of them leaving their cars at home to do a longer journey by public transport are near zero.

Only ask if you know!

These days in Britain the privatised railway system means that, depending where you live and where you are going, you may have a choice of competing train operators' services. However, finding out when they run and which has the cheapest fares is a real obstacle course. Recently, planning a trip from home (Coventry) to London I decided to try out the Silverlink service which competes with Virgin West Coast betwen the two cities. A flyer through my letterbox told me me I could do the journey for less than £17 at any time of day whereas, in the morning peak, the comparable Virgin price is £51. Takes a bit longer 'cos it goes via Northampton, but, given the price difference, and being a Scrooge, my interest was aroused.

On to the Internet for train times. Search the Railtrack web site for 'Coventry to London'. Answer, only Virgin services listed. Silverlink's not shown even though it runs from Birmingham/Coventry to London (Euston) - same starting point, same terminal.

On to the National Rail Enquiry Service by telephone for the authoritative details. Again, no Silverlink services given.

So I say: "What about the Silverlink services? (Pause, comes back with the timetable details). Right, how much is the fare?" Long pause. "£39." "Can't be - I've had a flyer which said much less than that." Another pause. "£34." "No it was less than that."

Long, long pause (consults Supervisor). "£16.90, Silverlink Saver." "That's more like it - and does that fare apply to the 08.02?" Long pause. "Yes." "Sure?" "Yes." "And I can buy that on the day? You're sure I don't have to buy it in advance?" Pause. "Yes."

Comes the day. Present myself at Coventry station ticket office. "Silverlink Saver return to London Euston please!". "Yes, sir, that will be £39.00."

"Pardon?", I say. "I was told by the National Rail Enquiry Service that it was much less than that." Booking clerk checks. "£34.90, Sir." "No, less than that - more like £16.90." Oh, that's a Silverlink Saver - it's not valid on the 08.02 - see, it says so here (shows me a typed missive from Silverlink Trains).

So, £34.90 it was (he did give me a complaints form to fill out and send to Silverlink - which I have).

The moral of this story? If you live in a country with a privatised and fragmented rail service (like Britain) don't (a) use the Internet (b) ask the National Enquiry Service or (c) go to the rail station unless you know what the answers should be, because the chance of getting correct information first time is, effectively, zero. Next time, I'll consider taking the car because(a) I know what time it leaves and what route it follows (b) I know how much it will cost and (c) it has a lot more leg room than Silverlink Trains' Class 321 units (it's one way of being (nearly) intimate with young ladies sat opposite) and there won't be loads of people standing for half the journey.

Bob Tarr,
Secretary General
bobtarr@lrta.org

Trams '99

By Bas Schenk and Maurits van der Toom. 224 pages 180 x 130 mm, perfect bound, 172 black-and-white photos, 31 colour photos plus five on card covers, three maps. Published by Uitgeverij De Alk bv, Postbus 9006, NL-1800 GA Alkmaar, Netherlands, price NLG 27.90. Obtainable in UK from Rapid Transit Publications (0181 554 2293) or Motorbooks (0171 836 5376) - enquire for sterling price. ISBN 90 6013 585 X.

Our regret is that the publishers do not issue an English version of this Western European survey, for the text is valuable, topical (and sharply critical where appropriate) and should sell well in English-speaking countries.

The photos are so excellent and right up-to-date that readers unable to cope with Dutch will still find the book excellent value for these alone. It is a concise and comprehensive account of recent and future developments (and unfortunately, mishaps), for money is short in many foreign systems. This reviewer found both encouragements and disappointments, some quite unexpected.

Inclusion of maps of Chemnitz, Jena and Zwickau seemed rather strange, but they are welcome additions. A pity it was not possible to add maps of systems with extensive development plans; the new Porto system with Strasbourg-type cars must have been announced too late. A final comment is that the fairy-tale-like story of Amsterdam's municipal operation still continues, though we must not forget that our Jubilee Line extension farce is a worthy competitor, even if not a tramway. **WJW**

Trams to the Hill of Howth

By James Kilroy. 64 pages, 235 x 180 mm, perfect bound with laminated card covers. 103 photos (53 in colour), two maps. Published by Colourpoint Books, Unit D5, Ards Business Centre, Jubilee Rd, Newtownards, Northern Ireland BN23 4YH (www.colourpoint.co.uk), price £9.99. ISBN 1 898392 13 7.

James Kilroy is Director of Tram Restoration at the Transport Museum Society, which has restored Hill of Howth tram 9 for display at the National Transport Museum in the grounds of Howth castle. He has his own memories of Dublin trams, so is well-qualified to write this photographic tribute which includes the history in brief of the Dublin to Howth tramroad and the Hill of Howth tramway.

Colour photos of the former do not exist (it closed in 1941), but with Hill of Howth trams lasting until 1959, a reasonable selection of attractive colour views isassembled, including a rare snow scene. There is also information on preservation of four of the fleet of 10 open-top double-deck trams. An excellent little book. **MRT**

Video: Die Hamburger S-Bahn

Duration about 60 min, colour, German commentary. Published by EK-Verlag, Postfach 500 111, D-79027 Freiburg, Germany (order code 5180), DEM 49.90.

The Hamburg S-Bahn is 90 years old and began as an overhead-wire ac electrification, acting as a feasibility project for the then Prussian state railways. The changeover to modern dc third-rail rolling stock started in 1939 and was completed in the 1950s, but one thing missing from this video is any film of the decrepit-looking ac stock; there are shots of still photos.

The dc stock always looked modern, in contrast to rather ugly Hamburg U-Bahn trains. Both systems co-existed, and continue to do so, with steady modernisation. The S-Bahn has changed its colour from blue through predominately white to all-red, and the newest part is a cross-city subway to replace surface routes. Do not think this is a shadow of the Berlin S-Bahn; it is quite different, nowhere more evident than in cab equipment. The commentary is softly-spoken and relatively easy for an English speaker to follow. An altogether enjoyable video. **WJW**

Three 1999 calendars from EK Verlag

All landscape format (300 x 480 mm) with 13 colour photos, spiral bound with card stiffening. Stadtverkehr in aller Welt 1999 (ISBN 3 88255 951 9), Alpenbahnen 1999 (ISBN 3 88255 947 0), and Deutschlandreise 1999 (ISBN 3 88255 948 9). Published by EK-Verlag, Postfach 500 111, D-79027 Freiburg/Brsg, Germany. The first two cost DEM 29.80, the third DEM 19.80.

The first of these calendars is the one which will attract most of our readers, as it covers trams and urban railways. This year it has a stronger historical bias, with elderly trams in Plauen, Innsbruck, Lisboa, Rostock and Osijek; more modern trams represent the Rhein–Haardt-Bahn, Halle, San Francisco and Karlsruhe. Urban railways are illustrated by the Berlin S-Bahn, Barcelona and Auckland, while the unclassifiable is represented by the famous Dresden cable-worked suspended monorail of 1901.

Of the other two, Alpenbahn 1999 includes the Austrian Montafonerbahn and the 760-mm gauge line at Mariazell, also three Swiss metre-gauge lines. The balance are scenic main line views. Deutschland-reise 1999 has half a dozen views of steam trains (one narrow-gauge) and a view of battery railcar. All are attractive and strongly recommended. **WJW**

OBITUARY

Richard Kunz

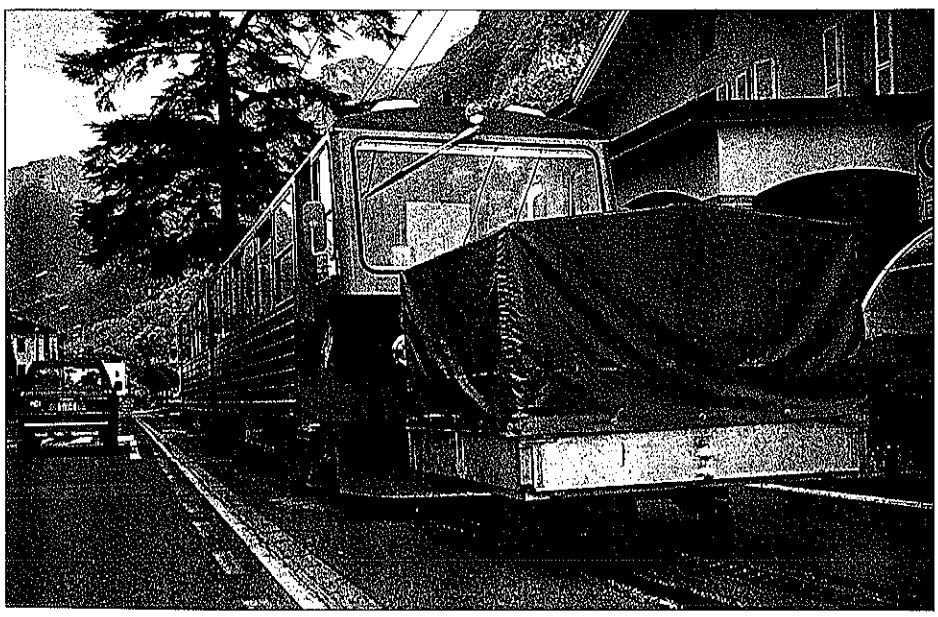
We report with regret the death in Chicago on 5 November of Richard Kunz, aged 61. Richard R. Kunz was a prolific transit author, and founded the New Electric Railway Journal, which he edited from 1988 until the time of his death. He was also involved in other journals and books covering Chicago transit history. His effort and expertise will be much missed.

Wolfgang Schreiner

Well-known German tram enthusiast Wolfgang Schreiner of Leipzig died recently. As a resident of the former German Democractic Republic in the 1950s, Schreiner was willing to act as the focus for tram fans who were obliged to practice their hobby with circumspection, and he was not afraid to maintain contact with western enthusiasts, despite many difficulties. He was also responsible for much tramway museum activity in Leipzig.

Monte Generoso l

At the lowest point of the line, alongside the SBB/FFS Gotthard line, the MG line to the lake swings left, while ahead is the depot connection. *C. J. Wansbeek*



Twin-set 11 stands in the street at the forecourt of Capolago railway station, with the home-made luggage trailer coupled up. *C. J. Wansbeek*

C. J. Wansbeek visits a scenic line in Switzerland that is benefiting from creative marketing.

A few miles south of the lakeside city of Lugano, the steep Generoso mountain offers the finest panoramas that can be found in the Swiss canton of Ticino. On a clear day, visitors can see from the plain of Lombardy (with the cathedral of Milano clearly visible) to the peaks of the South Tyrol. This is Switzerland, so an electric light railway cannot be too far away. Indeed, the 1704m high summit of Monte Generoso can be reached by the rack railway of MG, an independent railway whose blue and orange trains are amongst the brightest in Switzerland.

Ever since its inauguration in 1890, MG has been recognised as something special, with gradients of up to 22%, an odd gauge of 800 mm, and (until 1982) diesel traction. Now electrified at 650 V dc, the MG line is rack-and-pinion over its whole length of 9 km, relying on the trusted Abt system with its double rows of steel teeth.

Time does not stand still, and today managing director Sergio Barenco and his staff of 50 (25 full-timers and 25 seasonal staff) work hard to meet the needs of an ever-increasing flow of passengers. In 1997 the MG carried over 80 000 passengers and the 1998 summer timetable, with its eight scheduled daily return trips is an all-time service record. On top of that there are many chartered trains for groups. Want to take your beloved to a romantic mountain-top restaurant dinner? MG will (for a price) oblige on the evening of each 14 February. Sig. Barenco is now also expanding the train service during the winter season, and already the former modest two-trip timetable has been expanded to six daily return trips. So far the results have been pretty encouraging, with around 12 000 passengers carried during the last full winter season.

A unique selling point of the system is the daily summer service for boat passengers, who arrive on a scheduled 50-minute trip from Lugano at the MG jetty at Capolago Lago. Here, the MG train awaits its passengers and in 1997 over 5000 passengers took advantage of the opportunity created by this unique interchange. From the landing stage passengers are carried over 300 m of level track adjacent to the Gotthard mainline railway. On the way, they pass the MG depot and workshops, which house the four Siemens/SLM twin-sets Bhe4/8 11-14 of 1981/2, before arriving at the street-running track which functions as the regular lower terminus.

More MG passengers arrive by train at Capolago, thanks to the connection with the

usiness is on the up

busy Gotthard line. There are express trains from Basel to Chiasso calling here every hour, and others direct to Zurich. The station is the first stop after the causeway which carries the railway across Lake Lugano to its eastern shore. The MG line is now fully-integrated into the national tariff system, so foreign visitors with a Swiss Pass travel over the line with a 25% discount. All rail stations in Ticino sell combined excursion tickets which include one day's unlimited travel over the MG.

From Capolago (274 m above sea level), the MG climbs through thick forest to arrive 30 minutes later at Bellavista, which, as its name suggests, offers panoramic views, with vivid contrasts marked by the seasons. An astonishing environment of Alpine grandeur gives opportunities for a host of leisure and sports activities. This is the highest point that can be reached by road, but the train can climb higher for another 10 minutes to the summit at Generoso Vetta, 1704 m above sea level, where the company owns a hotel and restaurant complex that also offers conference facilities.

There are special evening train rides when it is full moon, and star-gazing trains are also run for those with an interest in astronomy. In 1996 MG inaugurated its own observatory, with the assistance of the Ticinese Astronomical Society, featuring a 61-cm reflecting telescope and a number of secondary instruments, including a digital camera. Of the many public telescopes in Switzerland, the instrument at Generoso Vetta is the largest.

MG also offers trips on the line to those who are nature lovers. Everywhere throughout Ticino, and further afield, the bright MG folders are prominent, drawing tourists attention to the line. Not missing a trick, the month of December sees the arrival of Santa Claus on the MG trains to create a happy ambience for children and grown-ups.

New business has come from the establishment of Monte Generoso as a centre for paragliding. At most times of the day the mountain plays host to bird men moving noiselessly through the Alpine air. To carry their equipment, and other supplies, many trains feature a small self-built cargo trailer.

MG's success has persuaded its ultimate owner, Migros (Switzerland's leading supermarket chain) to continue to subsidise the financial losses which are around CHF 1 million/year. This works out as a subsidy of CHF 12 for each passenger carried. This situation goes back to 1941, when the founder of Migros took the MG under his wing, to prevent the then owners from selling-off the steel tracks for a large profit during the Second World War. The regional Migros companies must, according to the corporate charter, put aside 0.5% of turnover for sociocultural purposes, while Migros corporately sets aside 1% of its turnover for such aims. It is from these sources that MG receives its subsidy. Migros sells no tobacco products, so of course smoking is not permitted on the MG (though some small areas of the mountain-top restaurants are accessible for those who wish to smoke).

A new attraction for enthusiasts soon will the restored original steam locomotive H,2/3 2, built by SLM Winterthur in 1889. The locomotive was placed on a plinth when it was retired in 1956, and may now re-appear in time for the new millennium and to celebrate the 110th anniversary of the line. Also carefully preserved is first-generation diesel railcar Bhm 2/4 4 (SIG/Saurer 1957), withdrawn upon electrification in April 1982. There are also a couple of Hm 2/3 diesel locomotives built by SLM in 1953/4, but re-engined with VM diesels in 1979.

The author would like to thank Sig. Sergio Barenco for his kind support in the preparation of this article. Readers with a professional interest in local rail tourism may contact Sig. Barenco by fax on +41 91 646 7861.

Letters may be faxed to 01487 832001 (International +44 1487 832001), or sent by e-mail to hj@howardj.demon.co.

LCC cars and their power supply

The writer congratulates Messrs Croome, Feakins and Tuddenham for their lucid explanation in the December *T&UT* of the 'left hand rule' with respect to direct current motors and how they coped with electrical supplies from the conduit system employed throughout much of the former LCC Tramway system.

The writer wonders if these gentlemen (or other correspondents) can enlighten him on the requirement for twin overhead wires on the Eltham to Woolwich section. The usual explanation was to the effect that a single wire power supply would have affected the delicate instruments in Greenwich Observatory. Does anyone know exactly what instruments were affected and why the conduit supply at Greenwich did not affect these instruments, even though the conduit fed trams at Greenwich passed far closer to the observatory?

Greenwich was not the only one to insist upon such a system. In the March 1939 edition of *Modern Tramway* (recently republished by Adam Gordon), a similar twin overhead wire system was noted at Zelst in Holland in order not to disturb "the magnetic instruments of the Royal Dutch Meteorological Institute". I believe the Cincinnati Streetcar system also used a twin-wire electrical supply system.

Frequent tramcars and associated current variations would surely have affected the observatory instruments, unless the conduit system provided a bifilar supply to cancel out the magnetic fields generated by electric currents. However, surely the surges and arcs generated by the tramcar motor generated strong and varying magnetic fields. I await explanations from fellow readers with interest.

Ronald Gee
Sidcup, Kent

Not enough designs are off the peg

Bob Tarr (November) puts numbers to a gut feeling I've had for a long time - far too many 'new' designs and small production runs. Why, in a world of financial efficiency, must each new tramway project insist on a 'special' for its application?

It seems Salt Lake City has a sensible approach: buy something already designed and available, build around it, and get it up and running quickly. Even though I've spent my professional life at the frontiers of power electronics, I still maintain the correct approach (from all points of view) is to use the very simplest technology that will satisfy the REAL requirements of the application.

New light rail (or any transport) system is the last place to push technology for its own sake, pursue fancy design ideas, or pander to techno-egos!

Howard C. Burford
Wootton, Isle of Wight

Fitting JHP memorial

It was sad to read John Price's obituary in the January issue. Like many others, I am deeply grateful to him for his work and personal advice. Naming the library at Crich in his memory is a wonderful and lasting memorial.

Dr A.L. Minter
Sandwich, Kent

Employ more conductors – t to so many of our mobility p

We have just formed a 'Trams for Bath' group and the comments made last month by Bob Tarr under the heading 'Barriers and obstacles' are particularly relevant to our campaign.

The provisions made by any future tramway for elderly or disabled people is of great importance in a city such as this, where many seek retirement.

Nearly all the items he lists, which are of dubious advantage to many disabled people and distinctly irritating to the able-bodied, would be made unnecessary at a stroke if only the tram crew included a conductor.

A proper comparison should be made between the economics of automatic and manual ticketing systems to show the true cost of the technogyrations involved in avoiding the wages of an extra crew member.

This should include the expense of providing chatty doors and garish colour schemes, along with the lost revenue of passengers put-off by lack of a human assistant, the vandalism to unattended money-containing machinery and, of course, the staff required to empty the machines and enforce the ticket rules.

When all these are taken into account, along with the wasted time during loading (much more important to a tram than to a bus) and the vandalism during journeys, the burden of the conductors' wages begins to look more like a bargain.

The intention to include conductors in our proposals for Bath has met with universal acclaim, I cannot see us getting public

Hannover now claims the world's longest tram with this 50 m close-coupled set of 2500-series cars. But can a set including cars with two different fleet numbers claim to be 'a tram', even if passengers can walk through from one end to the other? ***Helmut Ahlbrecht***

Does Hannover operate the world's longest trams?

The November issue carries a photo of the latest Strasbourg tram, which at 43.1 m claims to be the world's longest. What do you think of the Hannover 2500-series (each single-ended , but double-sided, with a gangway connection matched for back-to-back operation)? These run as 50 m coupled pairs with a through passage along the length of the unit so that from the passengers point of view (and visually) they form one car. Technically they are not permitted to operate as single cars, since the network has few turning loops, and none in the central area. They work on routes 1, 4 and 8 (see picture above).

The new vehicles, although attractively styled, and with much more convenient step arrangements, are proving unpopular with regular users, who do not like the longitudinal seating, or the hard wooden seats, which may look good in a design brochure, but are a real deterrent for longer rides. Neither seated nor standing passengers have enough grip points, and the heating and ventilation system is poor as well. The view outside from the front is limited by a wall behind the driver, who sits in an isolated cabin, with no passenger contact. No tickets are sold and there are no ticket validators. The destination blinds are difficult to read.

Besides these drawbacks, the weight of nearly 1.6 t per metre of length and the price of DEM 3.48 million per 25-m car (through an order for 144 cars) seems to indicate that despite EU-tendering regulations, Üstra has no bargain at all, even if it may have the world's longest tram.

Helmut Ahlbrecht
Hannover, Germany

e answer roblems

support without it.

Perhaps Her Majesty's Railway Inspectorate should be asked to consider relaxing some of the rules for tramways with conductors.

It might make a few other tram and even bus systems rethink their economics and employ conductors again, to the benefit of everyone including the elderly and disabled. Sheffield has already shown it pays.

Adrian Tuddenham
Bath, Avon

South Hants supporters not labelled objectors, says DETR

The claim by Tony Smale of the Railway Development Society (December) that the DETR has treated letters of support for the South Hampshire Rapid Transit scheme as objections is incorrect.

All such letters, including that from Mr Smale have been categorised as support for the project and this was made clear in our acknowledgements, including our letter reference. Railtrack's letter said, and I quote, "...Railtrack plc objects to the draft order on the grounds set out in the appendix to this letter." This was clearly an objection and was rightly treated as such.

It is true that we treat as objections those representations which, whilst not objecting to the scheme in principle, raise concerns on specific aspects.

These may include, for example, statutory undertakers who are seeking the insertion of protective provisions in the Order relating to their undertakings. We believe however that this approach is generally accepted by promoters as it avoids any ambiguity which might arise from categorising such responses as representations.

Peter Hammond
Head of Transport and Works Act Processing Unit Department of Environment, Transport & The Regions, London

Nottingham's operator makes a promise of quality

We at Transdev and London United are delighted that the Government has given its support to the Nottingham tram project through a PFI project approval of £167 million.

We and our partners in Arrow Light Rail, the concessionaire company, have agreed with our customer to implement the concession in the next six months. The construction phase will last three years, and we plan to start operations in September 2002 for the remaining 27 years of the concession.

In addition to meeting the normal criteria for obtaining Government approval, the arrangements that have been made will ensure that in the deregulated market the public transport network of trams and buses will operate in an integrated manner.

This will be achieved by the presence of Nottingham City Transport, the municipally owned operator in Arrow Light Rail and in the tram operating company, which will be jointly owned and managed by Nottingham City Transport and ourselves.

The willingness of the Government to back the project is, we believe, evidence of its determination to promote public transport and thereby create a strong transport sector.

Transdev is now involved in the implementation of eight light rail projects, including six in France, one in Portugal and NET. These are in addition to the five systems already in operation and being further extended.

Nick Buckley
Executive Director Transdev
François-Xavier Perin
Chairman London United Finance Director Transdev

No curves please on the new light rail line, please

News from Nottingham is splendid, as it the plan to use British-built, Strasbourg-style trams.

An abiding memory of Strasbourg is the way the trams glide at good speed right into the centre of the city, so I hope that Nottingham's designers will create a system free from the kinks and bends which so affect the overall speeds on parts of the Sheffield system, such as alongside the station and route to Meadowhall.

Of course, no green light from British politicians would be complete without a cold douche of gloom and misery with news that no more money will be available for light rail for some time to come!

You will never, ever, persuade motorists to forsake cars for buses. Only a quality alternative - light rail - will do that. It costs more in the short-term, but is cheaper ultimately. Only blinkered Westminster politicians seem unable to see that.

J. Gilbert
Malvern, Worcs

Draining the river to build a tram route

An interesting letter in November's *Waterways World* magazine revealed a proposal in the *Manchester Guardian* for 1 February 1924 by Mr Leeming, the engineer and surveyor for Barton-upon-Irwell Rural District Council and a tramway and underground railway enthusiast.

Concerned about the accident level in the city (did he mean Barton-upon-Irwell or nearby Manchester?) he suggested draining the River Irwell and converting its bed into a tram route to form the basis of a six-route underground tramway.

He was keen to use the river bed as it would give sufficient headroom for double-deckers, feasible on the river bed section, but tunnelling costs would have been very high. This proposal bears a slight resemblance to earlier schemes for tram subways in London except for using the bed of the river.

According to the letter, the council set up a special committee to study his plan, but nothing came of it. An illustration from the *Manchester Guardian* was published with this letter showing a four track tramway reservation, a two-lane motor road and a narrow canal serving adjacent warehouses.

Mr Leeming was apparently concerned about claims for compensation if their owners lost the right to ship goods by water. Has any reader any more information about this scheme, and where would the six routes have run to?

John David Watts
Nottingham

Golf course is sad role for site of Budd plant

I was intrigued by the comment on page 398 of the October issue that the Red Lion plant of the Budd organisation in Philadelphia is to become a golf course!

I was privileged in 1951 to be selected by London Transport to take part in the Marshall Plan to rehabilitate Europe after the end of the war under the EC administration which was set up at this time. I spent several months studying railway engineering developments, especially appertaining to urban transport. Among the many organisations which I was privileged to visit was the Budd plant, which was a very efficient works at the time.

J. Graeme Bruce
Harrow, Middlesex

Underground station is older than stated

I greatly enjoyed Mr Wansbeek's article on my favourite Swiss light railway, the Centovalli line in Canton Ticino. However, may I suggest that the author is mistaken when he states that the Locarno end of the line was put underground in 1996?

I first visited the line in June 1994 and the new terminus was certainly in use at that time. I particularly remember the efficient air-conditioning in the station, very welcome in summer temperatures of over 30 deg Celsius!

I also recall a very nice model of some older Centovalli stock in the window of the FART Travel Agency in the Piaza Grande in Locarno, although staff could not give me further information about them.

Dave Greenly
Mold, Flintshire

Centovalli and its unspeakable acronym!

The Centovalli article revived memories of visits some years ago.

On one occasion, some members of the party suggested that the Swiss company should be renamed. I think they found the acronym offensive and were not amused when all we suggested was Frontier Area Rapid Transit!

We then tried to do something similar for the Italian side but could only come up with Streetcars Serving the Italian Frontier.

John R. Betts
Banbury, Oxon

The case for tram bells

I was intrigued by the final part of 'Kit' Holden's safety article (January issue), particularly the comment that vehicles should shout 'tram'.

On my two visits to Melbourne, I have noticed that the tram bell is the warning device, but the high speed of traffic and trams along some routes seem to make it less effective.

The problem with modern warning devices is that each operator adopts something different in tone and type, fine for local people, but difficult for visitors to identify with.

C.T. Dugan
Taunton, Somerset

Please write - but please be brief!

WORLDWIDE REVIEW

ARGENTINA

BUENOS AIRES. Metrovias has acquired 30 metro cars second-hand from Nagoya, Japan, which it is fitting with pantographs for use on line D. This line will be extended 1 km in February to Calle Juramento in the Belgrano district. *(A. Morrison*

AUSTRIA

GRAZ. Articulated tram 262 of 1963 has been withdrawn from passenger service for conversion into a track scrubber, to replace two-axle car 235. *(EB*

LINZ. Work will start in 1999 on the 3.6-km tram extension from Simonystrasse to Ebelsberg, for completion in September 2001. 18 low-floor trams are to be ordered shortly to boost the fleet and replace 15 first-generation articulated cars. *(HOV*

STERN & HAFFERL. Following the absorption of the NWP into the Linzer Lokalbahn, 21 106/7 have been renumbered 22 106/7, 21 150 is now 22 109 and 21 104 has become 20 113. The new GTW2/6 units on order for LILO will be delivered as 22 151-8 from the end of 1999. *(EB*

WIEN (VIENNA). The westward extension of *U-Bahn* line U3 from Johnstrasse to Ottakring was opened on 5 December, bringing the line to 10.4 km. *(EB*

BELGIUM

BRUSSEL/BRUXELLES. The tramway cut back from Erasme to Saint-Nicolas referred to in our January report affected route 56, not 26. STIB has ordered 12 Mercedes Cito minibuses with a new form of diesel-electric drive, for use on bus route 21. From 1 February the price of a 10-journey ticket is increased to BEF 340, but single (BEF 50) and day (BEF 130) tickets remain unchanged. *(T-2000*

BOSNIA

SARAJEVO. 11 Tatra **T3** trams are being refurbished by Pars DNM Sumperk and CKD Dopravni Systemi. *(RGI*

BRAZIL

RIO DE JANEIRO. On 29 December, two days before the end of his term, Governor Marcello Alencar announced completion of the USD 3 million reconstruction of the Santa Teresa tramway, which delivered 14 refurbished trams and re-opened service on the Silvestre and Muratori lines, which had been closed since 1966. However, for the moment service is limited, for the company has only 15 employees qualified as tram drivers. *(A. Morrison*

CANADA

CALGARY. 11 **SD100** light rail cars with ac drives have been ordered from Siemens for delivery from May 2000. *(C. J. Wansbeek*

OTTAWA. A memorandum of understanding has been signed between CP Rail and the Ottawa-Carleton Regional Council on details of the proposed diesel light rail line between LeBreton Flats and Confederation Heights. A business plan is due to be approved in March to permit upgrading of the freight line to get underway. *(J. Wolinsky*

The 2000-series CAF-built metro cars for Madrid are the latest narrow-profile stock and can be seen on line 10, with its interesting station design demonstrated here by Lago, on one of the few surface sections of the metro. *Michael Taplin*

CHINA

HONG KONG. The KCRC is to spend HKD 2300 million on expanding the Tuen Mun light rail system, including the 1.7-km line needed to complete the Tin Shui Wai loop. MTR has ordered 13 eight-car metro sets from a consortium of Hyundai and Mitsubishi, for delivery in 2001/2. They will be used on the extension to Tseung Kwan O, and are the first trains for the system to be ordered from Asian builders. *(RG*

CROATIA

ZAGREB. Work is in progress on two tramway extensions: 2 km beyond Dubrava to Culinecka, and 1.5 km beyond Jarun to Precko. *(BS*

CZECH REPUBLIC

HATE. This village on the Czech/Austrian border generates considerable sums of money from Austrian visitors by operating a tax-free shopping zone. However the traffic problems this has created have led to plans for a tramway to be constructed to link new car parks on the edge of the village. The promoters of this scheme have already purchased the ex-Köln *Wiener Lokalbahn* centre-entrance interurban trams that were sold from WLB service to the operators of a safari park in Traiskirchen, but never used. *(Richard Bilek*

DENMARK

KØBENHAVN. A final line was drawn under the duobus experiment in October when the overhead wiring was dismantled. The three-year experiment cost DKK 42 million. *('Ligeud'*

FRANCE

LYON. Alstom has purchased one of the three 1974 SLM rack cars, MC1, for use at its Valenciennes test track. *(T-2000*

PARIS. The local authorities have agreed plans for the further extension of tramway T1 beyond Noisy-le-Sec, via Romainville and Montreuil to the RER station Val-de-Fontenay, with a branch from Noisy-le-Sec to the SNCF station at Rosny-sous-Bois-Perrier. RATP has ordered 57 LPG-powered buses from Heuliez (with an option for a further 55) and 53 natural gas-powered buses from Renault (with an option for a further 53). LPG powered buses will run from Aubervilliers (and later Belliard) depots, CNG buses from Créteil (and later Nanterre). *(TP*

VALENCIENNES. On 9 December SEMURVAL agreed to place an ECU 28 million order for 17 *Citadis* **TGA301** low-floor trams from Alstom for delivery to the new tramway system in the year 2000. There is an option for a further 1-4 trams, and a price guarantee on a further seven. *(C. J. Wansbeek*

GERMANY

BERLIN. The *S-Bahn* was re-extended from Tegel to Hennigsdorf on 15 December and from Pichelsberg to Spandau on 30 December. *(HOV*

BIELEFELD. The new 4.5-km light rail line to Universität will not be ready to open in 1999, and May 2000 is now a more likely date. Studies are in progress for a 1.3-km extension of route 3 from Barnhausen-Süd to Thesen. Also on the drawing board is a 5.9-km line linking the city centre and Heepen. *(C. J. Wansbeek*

BRAUNSCHWEIG. A 47-zone joint tariff area came into effect on 1 November. A day ticket for the city zone now costs DEM 7 (DEM 12 for a family ticket, up to five persons). *(BS*

Brisbane plans back on track

Public consultation started on 9 December on a replacement for the aborted Britram project. Brisbane light rail is a AUD 235 million project developed by Queensland Transport, with stage one planned to be operational by the end of 2001. Stage 1 comprises 5.32 km serving George St, Adelaide St, Melbourne St and Grey St in the central area. Stage 2 is a further 5.88 km running from Mary St in the centre north to Wickham St, Commercial Rd and O'Connell Terrace.

Unlike the standard-gauge Britram proposal, Brisbane light rail is intended to be 1067-mm gauge to permit through running onto suburban lines of the Queensland Railways system, and possible joint operation with planned guided busways. Heritage tramway operation on city streets is not a feature of this plan. Public consultation runs until 12 February, after which final plans will be the subject of a call for expressions of interest from the private sector. *TA*

BREMEN. The 700-m Arsten-Südwest extension of tram route 4, built at a cost of DEM 4.5 million, was opened from start of service on 7 December. *(BSAG*

DRESDEN. The last timetable change, on 27 September, saw closure of the Löbtauer Strasse–Coschütz section of route 8. Whilst the section Löbtauer Strasse–Westendring is closed for good, in 2000/2001 route 3 will start using a new link from its Plauen terminus to reach Coschütz. *(SV*

ESSEN. The five surface stops on the Margarethenhöhe to Gemarkenplatz section of route U17 are to be rebuilt with 900mm-high island platforms. This will permit the folding steps on the *Stadtbahn-B* cars to be removed, and also permit the ex-Docklands cars to be used on this route. *(BS*

FRANKFURT-AM-MAIN. The new *S-Bahn* station Messe opened on 13 January. Work will start during the spring on the long-planned depot at Ost. DEM 42 million is earmarked for the extension from Hamburger Allee to Rebstock, due to be completed by Christmas 2000. *(RGI, SV, BS*

HALLE. A large number of Tatra trams has been renumbered: 1035, 1101/3/5-10/2-4/6/8/27/38/ 59/65/70/4/9/80/5/6/9/90 are now 1107/27/38/59/65, 1035, 1170/4/9/80/5/6/9/90, 1101/3/5/6/8-10/2-4/6/8, while 151/60/1/7/9/71/3/94/9, 209/13/5 are now 171, 213/5, 194/9/51, 209, 167/9/73/60/1. Double-ended car 901 is now 900. *(BS*

HANNOVER. The next extension of route 11, Bischofshol–Bünteweg, is due to be opened on 23 May. The line will reach its final terminus Messe-Ost in February 2000. *(BS*

KASSEL. Work should start in May on the conversion of the Kaufungen–Helsa railway into a regional light rail line, for completion in May 2001. The network from 4 October is:

1, Wilhelmshöhe–Holländische Strasse;
3, Druseltal–Ihringshäuser Strasse;
4, Grossenritte–Bhf Wilhelmshöhe–Stadthalle–Kaufungen;
5, Grossenritte–Niederzwehren–Holländische Strasse;
6, Brückenhof–Bhf Wilhelmshöhe–Goethestrasse–Wolfsanger;
7, Hbf–Rathaus–Am Stern–Städtkliniken–Ihringhäuser Strasse;
8, Hessenschanze–Kaufungen;
9, Hbf–Am Stern–Rathaus–Niederzwehren–Brückenhof.

A new turning circle is to be built at Holländische Platz (using Moritzstrasse and Henschelstrasse) at a cost of DEM 8 million. *(C. T. Wagner*

KÖLN (COLOGNE). Work has started on the 2.8-km extension from Junkersdorf to Weiden, expected to cost DEM 90 million, and to open in summer 2001. At the other end of route 1, the 600-m extension to Bensberg-Zentrum should be ready in May 2000. Work is in progress on the modification of route 2 infrastructure in readiness for the introduction of low-floor trams next summer. Plans have been unveiled to upgrade the Eifelstrasse–Südfriedhof section of route 12 for high-platform operation. Double-ended party tram 1877 has been created from the front section of car 3220 and the centre and rear sections of 3810. It carries a livery described as Magic blue-green. *(BS*

MAINZ. The tram routes are being renumbered as follows:

101, Hechtsheim Bürgerhaus–Hbf–Finthen Poststrasse;
102, Hechtsheim Bürgerhaus–Hbf –Finthen Römerquelle;
103, Hechtsheim Am Schinnergraben–Hbf–Bretzenheim. *(BS*

MÜNCHEN (MUNICH). The inauguration of *S-Bahn* line S1 to the airport took place on 28 November, following the completion of the link from Neufahrn to the earlier airport line, S8. There is now a 20-minute service on each line (line S1 trains split at Neufahrn, with the front three coaches proceeding to Freising and the rear three to Flughafen). A single ticket from the city to the airport costs DEM 14 (DEM 11.20 with a multi-ride card), but a day ticket costs DEM 17 and a *Partner-Tageskarte* (up to five family members plus a dog) DEM 25. The 7.7-km *U-Bahn* branch from Innsbrucker Ring to Messe Riem is due to be opened on 30 May, and will be worked by line U2. *(MVV, RGI*

POTSDAM. Four **Combino** low-floor trams (401-4) are in service on route 92, with four more expected in 1999. 401 is named 'Potsdam', 402 'Augsburg', 403 'Freiburg' and 404 'Hiroshima' (marking other cities that have ordered the *Combino*). *(SV*

STUTTGART. The 5-km extension of route U14 from Mühlhausen to Remseck will be opened on 22 May. On 31 May metre-gauge service on route 15 between Ruhbank and Heumaden will be withdrawn, with buses providing a temporary service until route U7 is extended from Ruhbank to Heumaden on 11 September. Delivery of 23 more *Stadtbahn* units will commence in April and from the end of May the U6 will be worked by double units. Route 2 is to be converted to standard-gauge operation in the year 2000, including the section between Berliner Platz and Hölderlinplatz, but the existing street loop will be replaced by two-way operation in Hegelstrasse and Hölderlinstrasse. At the other end the alignment to Obere Ziegelei will be replaced by an extension to Hauptfriedhof in Steinhaldenfeld, though not until 2001. A further extension of the system to Neugereut is planned for 2005. The metre-gauge route 15 to Stammheim now seems set to survive until 2005. Fares were increased from 1 January, but the price of day tickets remained unchanged (DEM 12 for one zone, DEM 20 for the network, valid for up to five family members except before 09.00 on Monday-Friday). *(G. Wandel*

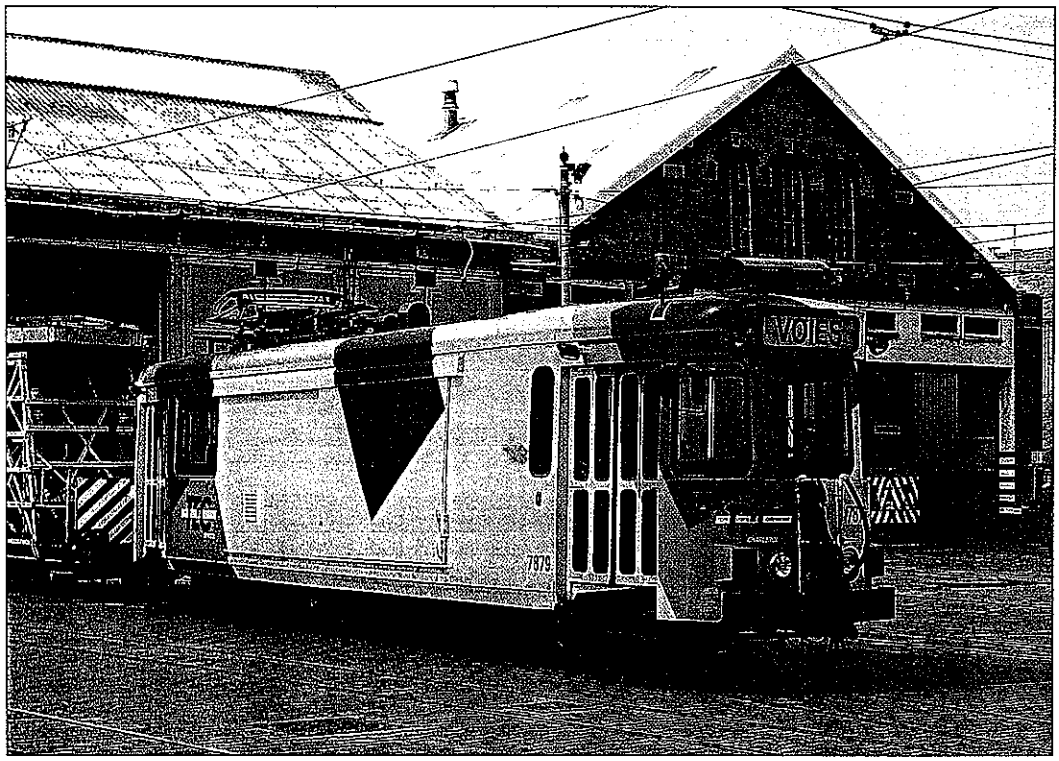
TROSSINGEN. The electric light railway celebrated its centenary during December, but is due to be replaced in 2000 by a new diesel railcar service Bräunlingen–Donaueschingen–Villingen–Trossingen. In the meantime only cars 5 and 6 are serviceable. It has not yet been decided whether the overhead electrification will be retained for operation of an historic electric train. *(J. Zimmer*

Kiel ponders 'Karlsruhe solution'

The study commissioned by the state of Schleswig Holstein from Transport Technologie-Consult Karlsruhe GmbH to consider future integration of rail services around Kiel has reported on options for linking DBAG and private railways with an urban tramway section in Kiel. Estimated to cost DEM 575 million, the project would see the following lines included:

Wik–Belvedere–Hbf Kiel–Neumünster;
Eckernförde–Suchsdorf–Dreiecksplatz–Hbf Kiel–Gaarden–Wellingdorf –Dietrichsdorf;
Melsdorf–Mettenhof–Kronshagen–Hbf Kiel–Gaarden–Elmschenhagen –Preetz–Plön;
Belvedere–Hbf Kiel–Gaarden–Wellingdorf–Schönberger Strand.

This would require 55-66 dual-system Stadtbahn cars. 15 million more public transport journeys would be generated from the region (population 600 000). On 29 October the Kiel city council agreed to work with the state and county authorities to secure the financing of the scheme, including an application for federal funding. *SV*



TEC Charleroi in Belgium has repainted its SJ works car 7879 in the latest fleet livery of yellow, red and grey. It is seen here at Anderlues depot. *Carlos van de Ostende*

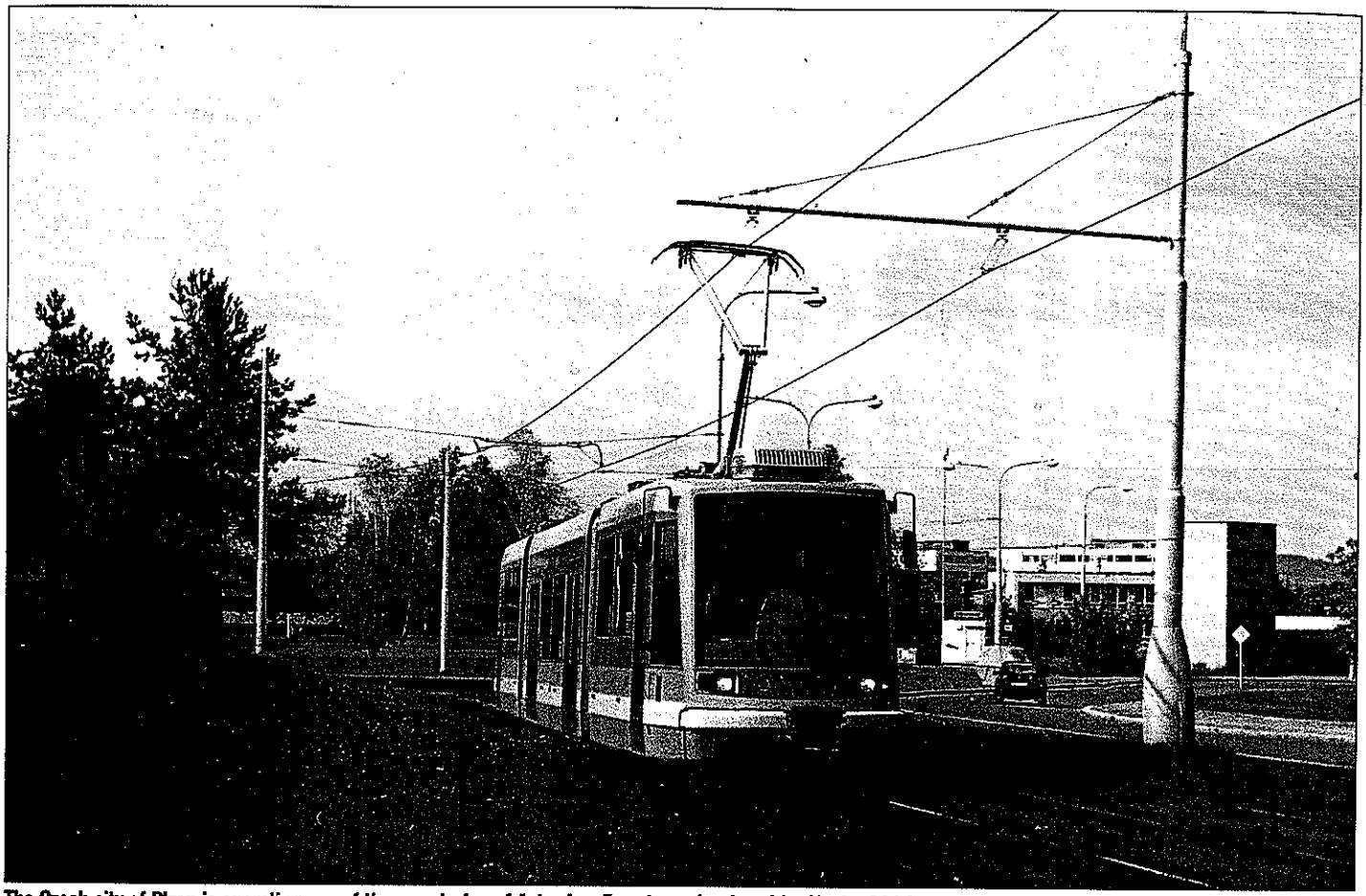
GREECE

THESSALONIKI. The 9-km 'starter' metro line is to be built by a consortium formed by Bouyges and Bombardier. *(RGI*

ITALY

FIRENZE. Tenders have been invited for the construction of the first tram route, Stazione Santa Maria Novella–Scandicci, and work should start in March. Meanwhile, the city council has confirmed that a second route will link the Peretola airport and the city centre. The central section will run from the new Stazione Alta Velocita (to be served by FS high-speed trains) to a temporary terminus at Piazza Piave, alongside the river Arno, via Piazza Stazione and Piazza Duomo. At a later stage this route should be extended to Bagno a Ripoli, a densely-populated south-eastern suburb. Work should start by 2001. *(P. Muraro*

GENOVA. Metrogenova and Ansaldo have reached agreement with the city council for an ITL 250 000 million investment in extending the segregated light rail line northwards



The Czech city of Plzen is operating one of the new design of Astra low-floor tram developed by Skoda. 301 is seen here at Sidliste Skvrnany. *A. D. Packer*

from Brin to FS Rivarlo (3 km) and east from Principe to Caricamento (2.2 km). *(C. J. Wansbeek*

MILANO. Track has been uncovered, and partially reinstalled, and overhead is being strung over the section of tramway from Viale Corsica to Viale Molise, used until 1978 by former tram route 13. As expected, it will now be covered by route 27, using 4900-series trams. Work is in progress to extend tram route 24 by 1.1 km from Via Noto to a new park-and-ride site at Cascina Selvanesco. The extension of route 12 from Via Console Marcello to Roserio is approaching completion. It is confirmed that route 19 will continue to run to Piazza Cacciatori delle Alpi. Work will start this spring to prepare route 14 for the delivery of the first low-floor trams from ADtranz. Tenders have been invited for the construction of the first light rail lines or metrotramvie, for which finance is secure. The first one, Piazza Cadtello–Parco Nord, includes the upgrading of the urban section of the Milano–Desio interurban. The project for the second one, Piazza Duomo–Rozzano, includes a new tram alignment from Porta Ludovica to Piazza Abbiategrasso along Via Teulié, in order to avoided the congested street tramway along Corso San Gottardo; the latter will continue to be served by route 3. Once the new section is open, route 15 will be the first Milano line to be almost entirely on reservation. Work should start in March. The other planned *metrotramvie* are:

Stazione Garibaldi FS–Cinisello Balsamo;

Bovisa FNM–Cascina Gobba;

Piazzale Axum–Stazione Garibaldi.

The new automated peoplemover linking Cascina Gobba metro station and San Raffaele Hospital was due to be opened in January. *(P. Muraro*

ROMA. Several 9100-series low-floor trams are now in service on route 14.

JAPAN

TOKYO. The first section of the Tama monorail line, linking Tachikawa station with Kamikitada, was opened on 26 November. The 5.4-km line cost JPY 192 000 million. Further extension to Tama centre is in progress. *(RGI*

NETHERLANDS

AMSTERDAM. A Europe-wide tendering exercise is to be carried out for 95 new trams, 25 for the IJ-tram project, and 70 to replace old stock. It is hoped that the order can be placed in the summer so that the first new tram will be delivered in May 2001. The Siemens Combino demonstrator arrived for trials on 19 January. *(HOV*

DEN HAAG. Electric power was supplied to new route 17 (CS–Volmerlaan) for the first time on 3 December and trial runs started before Christmas. Revenue service from 06.30 on 4 January saw an eight-minute headway at peaks, 10' between the peaks and 15' in the evenings and on Sundays. There was no opening ceremony. Permission has been given for depot access tracks to be laid in Dedemsvaartweg, between Meppelweg and Melis Stokelaan. Opening of the 1.25-km city centre tram subway has been postponed until at least autumn 2000. *(HOV, OR, C. J. Wansbeek*

GENERAL. Fares were increased from 1 January, with 2/3/8 *strippen* costing NLG 3/4.50/12, and 15 *strippen* sold in advance for NLG 11.75. On 20 November the Dutch public transport undertakings, the banks and the postgiro finally reached agreement on the specification for a national smart card to replace the *strippenkaart*, perhaps from 1 January 2000. The NLG 500 million project is expected to be financed by the government. *(HOV, C. J. Wansbeek*

ROTTERDAM. An order for 20 new trams is expected to be placed in 1999, and Siemens *Combino* was due here after its visit to Amsterdam. *(HOV*

UTRECHT. The *sneltram* station at Westraven near the A12 motorway is to be enlarged to become a park-and-ride *transferium*, and a turning circle built to permit short-working services between Westraven and Utrecht CS. Work is in progress on the extension to Zenderpark, with public service planned for May 2000. Tenders have been invited for the refurbishment of the 27 *sneltram* vehicles. The Midnet concession to run the system has been extended until 2005, with a target to increase patronage by 10%. *(OR*

NORWAY

OSLO. The first of the Firema-built low-floor trams, 141, was delivered in early December, to be followed after a period of trials by 142 in February. Tram 273 has been withdrawn to yield spare parts for others of this type. When the Gaustad hospital tramway opens in May the route network will be revised as follows:

10, Jar–Skøyen–Aker brygge –Jernbanetorget–Sinsen–Disn;

11, Majorstuen–Homansby– Stortorvet–Sinsen–Disen–Kjelsås;

12, Majorstuen–Frogner–Nat. theatret–Jernbanetorget–Disen–Kjelsås;

13, Gaustad–Stortorvet –Jernbanetorget–Nat. theatret–Skøyen/Jar;

15, Majorstuen–Frogner–Aker brygge –Jernbanetorget–Grefsen;

17, Gaustad–Stortorvet–Grefsen –Sinsenkrysset;

18, Gaustad–Stortorvet– Jernbanetorget–Ljabru;

19, Majorstuen–Briskeby–Nat. theatret –Jernbanetorget–Ljabru.

Stored Tatra tram 321 has been sold to Göteborg. *(LTF*

PORTUGAL

LISBOA. A *Carris* study has confirmed the feasibility of a 10.2-km light rail line linking Algés station on the Cascais railway line with Damaia on the Sintra line, estimated to cost PTE 20 000 million, and the proposed alignment will now be protected. *(P. R. Costa*

PORTO. The formal contract for the construction of the 70-km light rail system was signed with the Normetro consortium on 16 December, and work on the five-year project started in January. It is hoped the first section will be open for public service in January 2003. *(P. R. Costa*

SPAIN

BARCELONA (FGC). The first of 20 class 213 units was delivered during December. The vehicles will replace the two trains of former Swiss stock, and facilitate electrification of the Martorell–Gualada line in February. *(EA*

MADRID. The 2.3-km of metro line

11 from Plaza Eliptica to Pan Bendito was opened on 16 November. *(RGI*

VALENCIA. Four more low-floor trams of the existing design have been ordered from Siemens for ESP 9.5 million. *(C. J. Wansbeek*

SWEDEN

GÖTEBORG (GOTHENBERG). Work will start shortly on the construction of 1.2 km of new tramway along Skånegatan from Ullevi to Korsvägen, to be followed by the new 1.2-km tram tunnel linking Körsvagen and Chalmers. Another new link in the programme is the 0.9 km between Järntorget and Lilla Torget. The prototype articulated tram with a new low-floor centre section returned from MGB on 16 November, renumbered from 216 to 316, and reclassified as type **M31.** Overall length has increased from 22 to 31 m. Following trials a decision will be made on whether to rebuild some or all of the remaining 78 **M21** trams over the next five years. The Tatra bogie tram 321 is to be acquired from Oslo for use as a party tram. *(MfSS, Tåg*

STOCKHOLM. The SEK 600 million/year five-year contract to operate the Stockholm suburban train system has been awarded to the Via-GTI group, which will take over from SJ in the year 2000. The British Go-Ahead group has a 39% interest in the venture. 52 type **X10** train sets will be modernised during the period of the contract. *(FT*

SWITZERLAND

BERN–WORB (RBS). Control trailers BDt 242-5 have been scrapped. *(BS*

BIEL-INS (BTI). Be4/4 501/2 and Bt 551/3/4 have been transferred to RVO (Solothurn–Langenthal), where they have been renumbered 104/3, 152-4. The remaining Be4/4 units 503/4/5 have been renumbered 523-5, while ex-RVO Be4/4 109 is now BTI 521. *(EA*

LA CHAUX-DE-FONDS–LES BRENETS (CMN). A new panoramic control trailer Ast 21 has been built by Lauber on the frame of 1950 motor car BDe4/4 1. The new car will be shared with the *Chemins de Fer du Jura.* *(EA*

LAUTERBRUNNEN–GRINDELWALD (WAB). The articulated low-floor control trailers BDt^6 241-4 have been delivered. They are operating with motor cars BDEh4/4 121-4 built in 1970. *(EA*

LUGANO–PONTE TRESA (FLP). It is proposed to order five low-floor centre sections to strengthen the Be4/8 sets. *(EA*

RHÄTISCHE BAHNEN (RHB). The new 19-km Vereina tunnel was opened for public use on 19 November, with an hourly service introduced Landquart–Klosters–Scuol, reducing the journey time by 35%. Former Chur–Arosa dc motor cars 484/6 have been sold to the Chemin de fer de la Mure in France, while 481-3/5 have been scrapped. Newer cars 487/8 remain in store at Chur Sand. *(EA*

TAIWAN

TAIPEI. The 7.8-km Hsinchung metro line linking the main railway station and Chungho was opened at the end of December. *(RGI*

Upgrading work is in full swing on Stuttgart route 15 to Heumaden, where the central platform for standard-gauge Stadtbahn cars is under construction and the metre-gauge GT4 tram will run only until 31 July 1999. *G. Wandel*

TURKEY

ANTALYA. The new tramway is expected to open in February. The original 3-km line has now been expanded to 5 km since space for a turning circle could not be found in the city centre. *(C. J. Wansbeek*

ISPARTA. Consultants have recommended an 11.6-km light rail line as the first part of a future network. *(RGI*

USA

ALBUQUERQUE, NM. A two-year USD 5 million transportation study is in progress to examine transit options, including light rail. USD 90 million in federal funding has been earmarked already. *(J. Wolinsky*

ATLANTA, GA. Newly-elected Governor Roy Barnes has asked his administration to formulate a commuter rail plan that could be put to the state legislature later this year. Atlanta has had federal funding for highways withdrawn because of its failure to meet clean air guidelines. *(J. Wolinsky*

BOSTON, MA. PCC 3268 is the first to be shipped to Orient Heights metro depot for assessment of complete rebuilding of the Mattapan–Ashmont fleet. Air conditioning may be fitted and consideration is being given to turning the rebuilt fleet out in the historic traction orange, cream and silver livery. Work on a commuter rail extension to Fall River And New Bedford began in November, upgrading a freight railway.

(Scott Moore, Julian Wolinsky

CHICAGO, IL. Metra has approved a USD 227 million commuter rail 1999 capital expenditure programme, 50% more than in 1998. *(J. Wolinsky*

CINCINNATI, OH. Consultants have been hired to carry out a two-year USD 11.8 million engineering and environmental study for the proposed Covington–Blue Ash light rail line. *(P. F. Henry*

DALLAS, TX. Trinity Railway Express commenced Saturday service from 5 December, with hourly trains from 08.00 to 00.35 (Sunday). A 5-km extension to Esters Boulevard in West Irving is scheduled for May 2000. Average weekday patronage now exceeds 2100. *(J. Wolinsky*

DENVER, CO. The light rail extension to Littleton will come in USD 14.3 million under budget, and the surplus may be spent on more parking, security cameras and electronic monitoring of substations and ticket equipment. Otherwise 80% will have to be returned to the federal government. *(J. Wolinsky*

FORT WORTH, TX. On 16 December the city council approved preliminary engineering and environmental studies for a 14.3-km heritage tramway running south on North Main Street, Houston and Commerce streets from Exchange Avenue to 7th St, then west on West Seventh Street and Camp Bowie Boulevard. Construction costs are estimated at USD 35 million and 1.2 million passengers/year would be carried. *(J. Wolinsky*

JACKSONVILLE, FL. The extension of the Skyway Express has boosted patronage to around 80 000 passengers/month, although no fares were charged that month in order to lure new riders. The JTA hopes to attract about 17 000 daily passengers once a 650-m extension and two more stations are opened to bring the line to 4 km. *(J. Wolinsky*

LAS VEGAS, NV. Construction of a privately-funded 6.45-km monorail to connect the MGM-Bally and Hilton resorts has been approved, despite the possibility that it will not be compatible with the public system that is still on the drawing board. A 50-year franchise has been granted for the USD 350 million line, that will be an extension of the existing 1.3-km line linking two hotels. Completion is planned for 2002, though financing depends upon the sale of tax-exempt bonds by a newly-formed monorail construction corporation. *(J. Wolinsky*

LOS ANGELES, CA. The CTA has voted USD 134 million in state funds to complete the Red Line metro extension to North Hollywood. Another USD 151 million that was to have been spent on the cancelled extensions has been switched to accelerate the MTA bus procurement programme. The Commission has also voted to retain control of USD 258 million previously set aside for the Pasadena light rail Blue Line until a new transit authority empowered to build the 22-km project develops its funding and construction plans. Following the rejection of any further subway construction, MTA is examining the potential for busway or light rail feeders from Union Station to East Los Angeles, from North Hollywood to Woodland Hills, and from Flower St to Santa Monica

(J. Wolinsky, L. W. Demery

LOUISVILLE, KY. A newspaper poll shows 67% of residents in favour of the plan to build a USD 400 million light rail line to connect the city centre and airport. *(J. Wolinsky*

NEW ORLEANS, LA. The RTA has postponed a 25-cent fares increase after the city council objected. This would have been the first increase since 1992, and RTA has warned that more than three months delay will prejudice plans to restore tram service to Canal Street. *(J. Wolinsky*

NEW YORK, NY. Surplus funds are to be used to hire 1000 jobless people to help keep the subway system clean, and 150 drivers to permit extra services on the busiest lines. Effective 1 January a USD 4 27-hour MetroCard permitting unlimited rides on both subway and buses was introduced. A contract has been signed with Matra Transport International to install a test section of automatic train control (as used

on the Météor line in Paris) on the Culver line. *(J. Wolinsky, UTI*

ORLANDO, FL. Property owners are pressing for the proposed light rail line to moved from International Drive to an elevated structure slightly to the east, but transit officials are warning that this could cost USD 12 million and risk the loss of federal funding, as well as delaying completion by 18 months. The USD 600 million 'Lynx Lyne' project could be ready by December 2001 if no changes are made. *(J. Wolinsky*

PHILADELPHIA, PA (SEPTA). By the year end SEPTA had won back all but 1% of passengers and revenue lost during last summer's 40-day strike, However the agency still faces a USD 13 million deficit in the fiscal year. 100 of the 200 new ADtranz metro cars were in service by early December, and all weekend service on the Market-Frankford line was with new stock. The free city-centre heritage-tram loop service operated again in the Christmas shopping season as the 'Holiday Trolley', with two PCCs and a decorated Kawasaki tram. Service was every 20 minutes 10.00-17.00 on Friday/Saturday/Sunday from 27 November to 27 December (except Christmas Day).

(J. Wolinsky, S. J. Morgan

PHOENIX, AZ. A coalition of city and public agencies have formed valley Connections to promote a 37-km light rail line linking the central area with the regional airport, Tempe and Mesa. Preliminary engineering studies are in progress using USD 9 million in federal grant and sales tax revenue. The earliest date for completion is put at 2004. *(J. Wolinsky*

ST LOUIS, MO. The Sunday morning service was reduced from 10 to 15 minutes with effect from 6 December to make annual savings of USD 250 000. *(J. Wolinsky*

SAN FRANCISCO, CA (BART). The power failure on 8 December shut down the BART system for about 25 minutes in the East Bay, but for four hours on the link to San Francisco. Ticket exchange booths have been opened at Powell Street and 12th St stations where tickets with a low remaining value can be consolidated into a single ticket. *(T. C. Swinney*

SAN FRANCISCO, CA (MUNI). Muni has received a grant of USD 137 000 from the Bay Area Air Quality Management District to provide a free shuttle bus service between route N and the Music Concourse in the Golden Gate Park. Service will operate every 10 minutes 10.00-18.00 on Saturdays and Sundays from 15 May to 26 September. A mistake by electrical contractors using grounding equipment left all Muni services without power for several hours on 8 December, and passengers in the subway had to be evacuated from stalled trains. Once service was restored, travel was free for the rest of the day. By the end of December all 11 Milano Peter Witt trams had been moved from Pier 80 to the Muni Metro Center depot or Geneva yard. The final list is as shown in our September report (including the two cars acquired for spares). *(T. C. Swinney, S. J. Morgan*

SAN JOSE, CA. Plans for a commuter rail service from San Jose to BART's Union City station have been estimated at USD 66 million, including USD 23 million for locomotives and passenger cars, USD 10 million for stations and USD 33 million to upgrade freight tracks. Twelve daily trains could make the trip in 39 minutes by 2002 if funding is found and agreements negotiated with Union Pacific. Progress on the Tasman West light rail extension can be followed on web site: *www.tasman.vta.org (J. Wolinsky*

SEATTLE, WA. The staff recommendation on routeing, and the draft environmental impact statement for the proposed 38.6-km light rail line from Northgate to SeaTac, were released on 4 December. A vote on the former is expected to be taken on 25 February. Costings have increased from USD 1700 million to USD 2200 million due to additional tunnel segments. The line is scheduled to open in 2006. *(L. Demery, J. Wolinsky*

SILVER SPRING–BETHESDA, MD. Plans for a 6.4-km light rail line linking two outer ends of Washington metro lines at a cost of USD 250 million have been resurrected by a decision to complete the environmental assessment started in 1994. The line has been under discussion for 10 years. *(J. Wolinsky*

WASHINGTON, DC. From 1 March passengers will be able to pay USD 5 for a rechargeable proximity smart card, which can be used for transit rides and car parking. The metro now carries 536 000 passengers on an average weekday, a 5.5% increase over 1997, and additional trains are being scheduled on the shoulder of the morning and evening peaks. However ATP failures increased by 60% during 1998 as the original equipment ages, and additional maintenance is needed to keep it in operation. *(J. Wolinsky*

Another tram opening took place in Kassel on 3 October when the new link from Brückenhof to Oberzwehren was inaugurated. Here is low-floor tram 459, followed by museum car 44, sweeping under the new tramway underpass below Kerbacher Strasse and the KNE freight railway. *C. T. Wagner*

Tramway boom for Spain?

Reports from Spain indicate something of a boom in proposals for new tramways. We have already reported on proposals for Malagã. Another Mediterranean city, Castellón de la Plana (130 000), 75 km north of Valencia, has unveiled plans for a 4-km tramway link between the city centre and the new RENFE station for high-speed trains.

Valencia is planning two more tram routes to build on the success of line 4. Valladolid (350 000), 200 km north-west of Madrid, is seeking consultants for a feasibility study of a two-route tramway. In the capital, Madrid, studies are in progress for a peripheral tramway, to complement the expanding metro, from Moncloa to Pozuelo de Alarcón (12 km).

Alicante is pursuing its plans to convert part of the diesel-operated metre-gauge coastal railway to light rail with extension on street across the city to the RENFE station. On the islands, Las Palmas de Gran Canaria (400 000) is undertaking preliminary studies for a tramway to alleviate increasing congestion. Santa Cruz de Tenerife (200 000) is looking at the possibility of an 8-km line to La Laguna.

On Mallorca, a 12 km tramway linking Palma with the airport and El Arenal is to be studied, while 20-km of metre-gauge diesel light railway from Inca to Sa Pobla, closed in 1975, is to be re-opened in upgraded form. *C. J. Wansbeek*

Rhein-Neckar opts for Variotram

Despite trials with a Darmstadt Alstom/LHB tram, and the Siemens Combino, on 18 December it was announced that Mannheim's MVV Verkehr AG had placed an order with ADtranz/DWA for the delivery of 10 seven-section Variotram low-floor cars for delivery from December 2000. The single-ended, 40-m, trams will carry 110 seated and 140 standing passengers. It is expected that Heidelberg will shortly announce an order for eight five-section double-ended trams of the same design, 32-m long with 72 seated and 132 standing. Also in 1999, the interurban OEG will order 10 more Variotrams to join those already running. A decision by Ludwigshafen on the purchase of eight trams is due in March. The value of the total order for 36 cars will be DEM 170 million. *F. Muth*

Contributors

NEWS items for this column are always welcome and should be sent to **M. R. Tapiin, 3 Pine Way, Gloucester GL4 4AE (fax + 44 (0)1452 419900; e-mail miketap@globalnet.co.uk)..**

Topical good-quality photographs, particularly of new lines or rolling stock, are also welcome. Photos with plenty of people in them are very welcome. Original colour slides (dias) are preferred, but prints may be used if they are good quality. Items to be returned should be clearly marked with the sender's name and address, and accompanied by a stamped addressed envelope or IRC.

In addition to the individual contributions, acknowledgement is also due to the various magazines as listed: BS *Blickpunkt Strassenbahn*, CBT *Committee for Better Transit New York Streetcar News*, EA

Portland order for Skoda?

Preferred bidder for five low-floor trams for use on the planned Central City Streetcar line is Skoda of the Czech Republic with a version of its Astra design, for delivery in summer 2000. The contract would be worth USD 12 million, compared with tenders from ADtranz and Siemens of USD12-14 million for only four cars.

The Astra is a three-section car on two bogies with a suspended centre section, which first appeared in prototype form in 1997. Skoda is already established in the US transit market with trolleybus orders, but this will be its first tram export. The Portland Development Commission is putting up a further USD 7.5 million to permit the new tramway to run as far as SW 5th Ave/Mill St in the university district. *Steve Morgan*

On display at the Barcelona Franc railway station is this nicely-painted horse tram 2 of the local system. ***R. H. Rappelt***

Eisenbahn Amateur, EB *Eisenbahn*, FACS *Chemins de Fer Regionaux et Urbains*, HOV *Het Openbaar Vervoer*, IRJ *International Railway Journal*, LTF *Lokaltrafikk*, MfSS *Meddelanden från Svenska Spårvägssäll-skapet*, OR *Op de Rails*, PRm *Passenger Rail Management*, PT *Passenger Transport*, RGI *Railway Gazette International*, SM *Strassenbahn Magazin*, SV *Der Stadtverkehr*, TA Transit Australia, TP *Transport Public*, TR *Today's Railways*, TT *Tramway Topics*, TW *Trolley Wire*, T-2000 *Tram 2000*, UTI *Urban Transport International*, VdR *La Vie du Rail.*, VK *Város Közlekedés*, VT *Verkehr und Technik.*

MUSEUMS

ANTWERPEN (BE). Motor tram 200 (Franco-Belge, 1899) is to be extracted from Edegem museum and restored to running order in the new workshops at Punt aan de Lijn, ready for a photocall with the first new low-floor tram. The museum collection at Edegem is due to be transferred to Groenenhoek in September 2000.

LIEGE (BE). RELSE two-axle tram 51 of 1926 has been restored ready for display in the Nantalis museum.

SCHEPDAAL (BE). A project to completely-reroof the depot will mean the museum staying closed throughout 1999. *(T-2000*

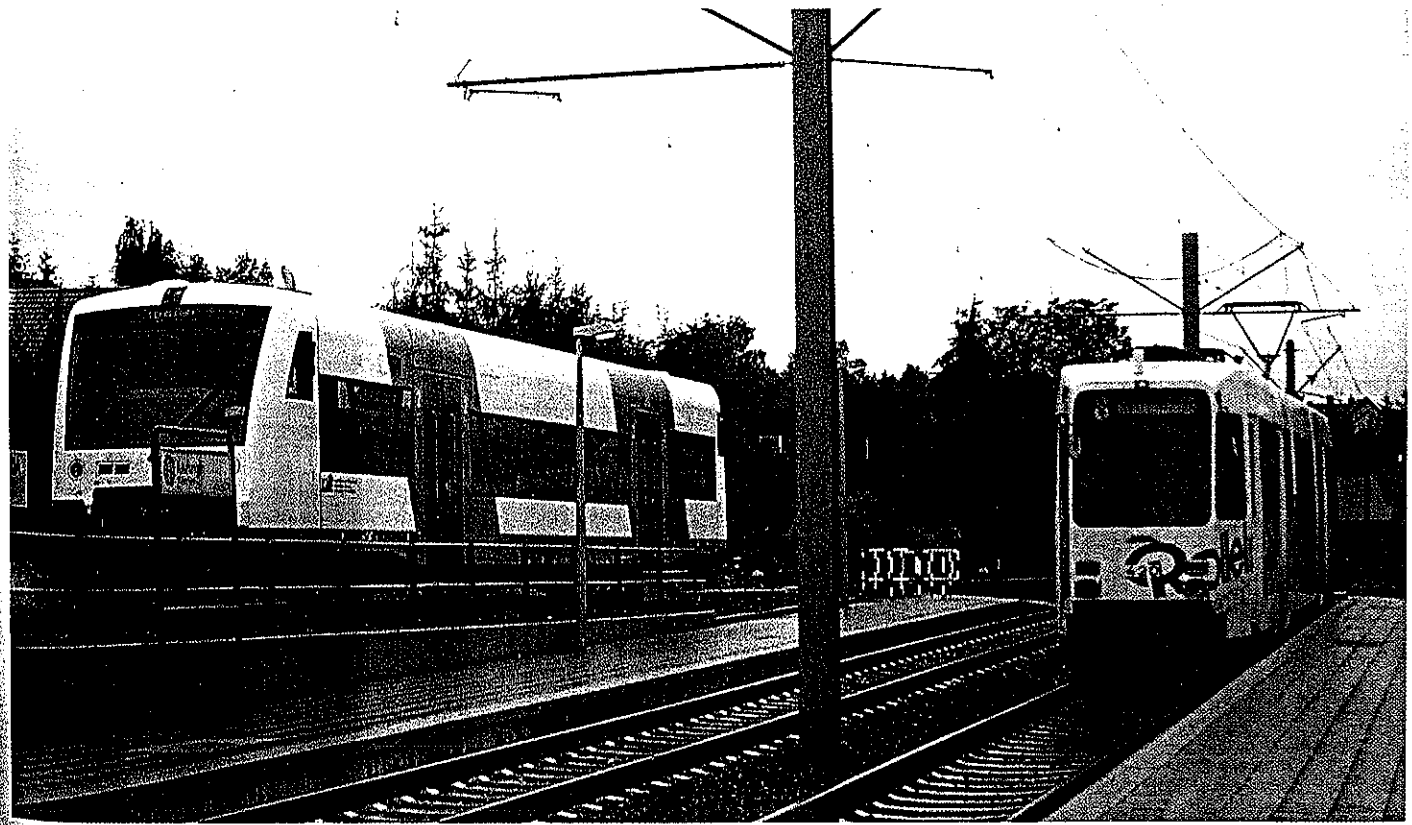
PARIS (FR). The doors of St Mandé transport museum were closed for the last time on 22 November, and there is little prospect of the collection being on show in a new location for perhaps two or three years. In the meantime the AMTUIR website will carry the latest news: *www.cnam.fr/hebergement/amtuir.*

The last tram added to the collection was St. Etienne PCC 510.

MALMÖ (SE). 5118 passengers were carried during the 31 days of operation of the museum tramway in 1998. 1316 travelled on tram 100 and the rest on tram 20.

Contributors

ITEMS for this column (and the items at the front of the magazine) are always welcome and should be sent to John Symons (British) or Michael Taplin (Overseas). Thanks are due to FACS, HOV, MfSS and *Trans-Fer.*



The extension of Kassel route 8 to Kaufungen Papierfabrik on 2 October is the first stage of a scheme to link the tramway with regional rail service. An ADtranz Regio-shuttle low-floor diesel railcar on demonstration to the KNE is seen alongside a high-floor Stadtbahn-N tram of KVG. ***C. T. Wagner***