

# RAIL BUSINESS INTELLIGENCE

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## POINTERS

★ Parliamentary approval on February 3 of the Scottish Government's 2010-11 budget has extinguished hopes that the decision to scrap the Glasgow Airport Rail Link might be reversed. Cancellation of GARL was announced in the draft budget presented on September 17 2009 (RBI351 p1).

★ A new Bletchley South Junction is to be created on the West Coast Main Line when crossovers are installed this August between the Fast and Slow lines one mile south of Bletchley station. This paves the way for a £113m resignalling project in 2011-12 that will see many layout changes in the area, to be controlled from Rugby SCC.

★ Freightliner Group has signed an agreement with Covanta Energy to build a transfer station at its Wentloog terminal near Cardiff that will handle waste to be burnt in a new power station at Merthyr Tydfil. 'This is the first part of a long-standing development which will eventually see Freightliner transporting fuel into Covanta's Brig y Cwn site by rail', said Freightliner Heavy Haul Commercial Director David Israel on February 10.

★ ORR has approved track access applications for additional or amended services from ECML operators East Coast, Grand Central and Hull Trains. 'It is now important for Network Rail to work with train operators to finalise the timetabling so that the additional services are up and running for May 2011', said Director, Railway Markets & Economics, John Thomas.

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## IEP commercial close imminent

As RBI went to press, DfT insiders were expecting to reach commercial close by the end of February with Agility Trains on the 20-year train service provision contract under the Intercity Express Programme. Financial close is expected by the end of 2010. Led by Hitachi and also comprising John Laing, Agility had been announced as preferred bidder on February 12 2009 (RBI336 p1).

With the Thameslink contract (p6) running in parallel, DfT is concerned that two train service provision deals might prove unworkable in the current financial climate. This has resulted in the splitting of IEP into six packages or tranches, including trains to replace the Great Western HST fleet following electrification.

As outlined in the consultation document for the replacement

InterCity East Coast franchise, the first package, worth around £600m to £700m, will cover the replacement of the ECML HST fleet, followed by Class 180 DMUs plus some of the Class 365 EMUs deployed on Great Northern (currently FCC) commuter services to Cambridge. All of these Hitachi Super Express Trains would be built in Japan.

Previously, DfT had planned to start IEP with a pre-series fleet for service on the ECML. This would have been made up of all three types of the SET - electric, diesel and bi-mode - and would have been used for acceptance testing.

The first batch of 13 10-car bi-mode units known as Package 0 will now be reconfigured to create five, 10 and 12-car electric units in addition to five-car bi-modes for signal interference and

other acceptance testing. Delivery is scheduled to start in July 2012, with acceptance starting in June 2013. Fleet service is expected for the May 2014 timetable change.

Within the overall programme, replacement of the East Coast electric IC225 fleet is now an option. If implemented, replacement would start towards the end of 2017 and be completed by August 2018.

Under its train service provision contract, Agility would also be responsible for providing new depot facilities at Doncaster and Bounds Green in north London. There would also be substantial expenditure by Network Rail on infrastructure enhancements to support IEP, including an upgrade of the traction power supply on the ECML south of Peterborough. ■

*East Coast deployment in detail - p6*

## Eurostar overwhelmed by snow

In its report published on February 12, the Eurostar Independent Review stressed the impact of the severe weather over southern England and northern France on December 18 and 19 which affected all forms of transport. Roads were closed, including the main M20 to Dover which also had parked lorries unable to use the shuttle backing up. Eurotunnel was already having to handle 1 000 people unable to board shuttles because of the snow at its Cheriton terminal and a further 300 at Coquelles.

Further inland, airports were also operating at greatly-reduced capacity or closed. The report points out that with Eurostar now having over 65% of the London - Paris/Brussels passenger market 'even if disruption were to occur in ideal weather conditions, it would be virtually impossible to make adequate alternative travel arrangements to accommodate all passengers'.

But that is as far as mitigation goes. The review has concluded that Eurostar should have been better prepared for the scale of disruption and should have reacted earlier when trying to help passengers caught up in the delays. 'The fact

remains that Eurostar did not have a plan in place and had to improvise, and its provision of information to customers was inadequate', said the Review's Joint Chairmen Chris Garnett and Claude Gressier.

On the five train failures in the Channel Tunnel (p8), the report says that standard preparations for winter operation could not cope with the severe snowfall last December. Maintenance concerns include failing to take into account the effects of age on parts of the 15 year-old Eurostar trainsets, such as door and cubicle seals. In addition, there were design issues including the lack of protection for electronic equipment from contamination brought in by Eurostar's need for large amounts

of air to cool traction equipment. This was also not allowed for in the maintenance regime.

While the evacuation of two of the five trains stopped in the tunnel was carried out efficiently 'and in some cases creatively' by Eurotunnel and the rescue teams, the review is highly critical of procedures for dealing with conditions inside Eurostars when power from the overhead line is lost inside the Channel Tunnel, shutting down air-conditioning.

Eurostar's lack of an adequate emergency plan for dealing with passengers at St Pancras in the event of multiple train failures is also criticised.

Three main areas are covered *Continued on page 9*

## Nightmare before Christmas

The 664 passengers on the failed train 9057 which had left Marne-la-Vallée at 19.37 on December 18 suffered the worst privations, many of them returning with young children from Disneyland Paris. Conditions within the Eurostar led to passengers opening doors and exiting the train onto the tunnel walkway. When rescue teams arrived, passengers and their

luggage were transferred to an empty Eurotunnel car shuttle with minimal food and toilet facilities.

Evacuation began at 01.56 French time. The shuttle arrived at Coquelles at 04.16. Eurotunnel provided water and pastries before the shuttle set off for Cheriton where it arrived at 06.20. Transfer to a Eurostar sent from London did not start until 08.15 and took an hour. The weary travellers finally arrived at St Pancras at 11.53 (10.53 GMT).

## Moreton-on-Lugg barriers up

As its investigation continues into the fatal collision between a train and two cars at Moreton-on-Lugg level crossing between Hereford and Leominster on January 16 (RBI358 p2), RAIB says that 'preliminary examination indicates that the level crossing barriers were raised as the train was approaching the crossing. There is no evidence that the actions of the motorists or the driving of the train contributed to the accident'.

Two cars were waiting in line for the barriers to rise. The first was hit by the train and pushed along the track, killing the woman driver and injuring her husband. The second car appears from the damage to have hit the side of the train; both occupants escaped with minor injuries.

The MCB crossing at Moreton-on-Lugg has full-width barriers controlled from the adjacent signalbox. The signaller has been suspended, and Network Rail says it has made a full and complete apology to the bereaved and injured, accepting that 'in some way' it bears responsibility for the accident.

From this it is evident that both distant and home signals protecting the crossing must have been clear when the 08.30 Manchester Piccadilly - Milford Haven service, operated by Arriva Trains Wales, passed the distant at the normal speed. At this time, the barriers were down and the two cars were either approaching or stopped at the barriers waiting to cross.

With modern signalling, occupation of track circuits by an approaching train should allow the signaller to return the signal protecting the crossing to red, but prevent the barriers from being raised until a time delay has elapsed, as with the movement of facing points.

It would seem that this interlocking feature did not exist, and the signaller may have become confused and thought the train had already passed when it was in fact still approaching. ■

## Safety continuing to improve

In its overview of safety performance for 2009, published on February 2, RSSB reports that in most respects safety on the national network continues to improve. Five passengers died during 2009, all in separate incidents at stations, and only one member of the workforce was killed - a look-out hit by a train in Leeds.

For passengers and staff on trains the risk has never been lower. Only one passenger was killed (at Grayrigg) in the last five years, and the 10-year moving average of passenger or workforce fatalities in train accidents has been less than one a year since 2006.

RSSB calculates the number

of potentially higher-risk train accidents each year according to standard criteria, and whereas the five-year average from 2005 to

2009 was 46, in 2009 alone it was just 39, the lowest on record.

After a steep decline in SPAD risk, the improvement levelled off during 2006 and 2007, with even a modest regression in 2008. RSSB was able to report a significant reduction of 19% to a record low of 264 Category A SPADs during 2009, with the level of SPAD risk now standing at 7% of the March 2001 baseline.

Areas that continue to show no real sign of improvement in 2009 include 265 suicide and trespass fatalities, along with 14 other members of the public of whom all but one were killed on level crossings: eight as pedestrians and five in road vehicles. ■

### Soundbite

'A number of key safety performance indicators were at their lowest recorded level in 2009, but the loss of lives at stations, level crossings and among the workforce remind us that risks associated with railways and their interfaces remain and the industry needs to continue to look for effective ways to reduce those risks further.'

**Anson Jack**

Director of Policy, Research & Risk  
RSSB

February 2 2010

## Stewarton warnings went unheeded

The derailment on January 27 2009 of the last six wagons of a train carrying gas oil, diesel and kerosene from Mossend to Riccarton was caused by the failure of badly-corroded wrought iron main girders in Bridge 88 south of Stewarton (RBI335 p3), RAIB has concluded in its accident report published on February 3.

As the DB Schenker Class 66 locomotive crossed over, the span began to sag causing minor damage to the first four wagons which stayed on the rails. The six rear wagons all crossed the gap but lost their bogies and turned on their sides. The brakes were applied when the air hoses between the fourth and fifth wagons parted.

The last wagon caught fire and around 220 000 litres of fuel either burned or were spilt, entering a tributary of the River Irvine and causing what RAIB describes as 'a major pollution incident that had serious impact on the ecology of the Garrier Burn, killing all fish and invertebrates'. The stone south abutment of the bridge collapsed onto the A735 below along with the girders, but no road vehicles were passing when the derailment took place at 06.12.

Bridge 88 dated from construction of the joint line to Kilmarnock in the 1870s. It was a single skew span with three fabricated main girders supporting two tracks. Originally, the rails were supported by longitudinal timbers on the wrought iron cross-members, replaced by ballasted track resting on a timber deck in the 1930s.

The line was singled in the 1970s rendering the western side redundant, but Network Rail was in the process of re-doubling it at the time of the accident. A new span had already been delivered to the site, and this enabled the line to be re-opened within a month. The new 5 mile double-track section between Lugton loop and a point just to the south of Bridge 88 is now in use.

The weaknesses in the structure of the bridge stemmed originally from the way ballasted track had been installed. Although vertical timbers had been provided to contain the ballast, they created hidden corrosion traps against the faces of plates forming the web of the main girders. This resulted in severe corrosion and even holes forming where they could not easily be

seen, and no steps were taken to remedy this.

The last detailed assessment of the bridge was performed by Atkins on the night of October 6 2003. The engineer was so alarmed by the extent of web corrosion that he phoned his duty manager, and an urgent defect report was sent to NR the following day. But no action was taken, and less intrusive annual examinations conducted about once a year which mentioned corrosion were also ignored.

On January 16-17, Jarvis used excavators to remove ballast from the west side of the bridge prior to its replacement, and on the night prior to the collapse spoil from the disused trackbed immediately to the north of Bridge 88 was loaded into wagons standing on the single track.

It is believed that a Class 66 loco was actually standing on the span which collapsed under the oil train a few hours later. If so the driver had a lucky escape, because a routine recording taken just three days earlier shows a distinct dip in the track over the span, implying that the weakened webs of the main girders had already started to fail. ■

## New Street Gateway gets planning approval

Birmingham City Council granted planning approval on February 4 for the major rebuilding programme that will see £600m spent over the next five years on increasing the capacity of New Street station, including the construction of a larger concourse enclosed by what Network Rail describes as 'a giant, light-filled

atrium'.

'Today's endorsement sees a further green light given to one of the most important projects undertaken in this city in generations', said Councillor Mike Whitby, Leader of Birmingham City Council. 'The redeveloped New Street Gateway will provide a focal point for far wider regen-

eration of the entire city over the next 10 to 15 years, and is one of the main components of the city's £6bn worth of publicly-funded regeneration projects currently on our books'.

Preparatory work on Phase 1 commenced in September 2009. This will see the two lowest levels of the car park on the west

side of the main station building converted into the new concourse, due for completion in 2012 and connected by lifts and escalators to the 13 platforms below.

When last rebuilt in 1967, New Street was designed to handle 60 000 passengers a day. That figure now stands at 140 000 and is expected to rise further. ■

# Settle – Carlisle track renewals near completion

A New Track Construction Train operated by Balfour Beatty Rail Ltd is to be deployed from April to September to replace most of the remaining jointed track on the 72 mile Settle – Carlisle route during week-day nights, Network Rail announced on February 5. This should enable track renewals to be undertaken with 'virtually no disruption to passenger train services', according to NR.

Up to now, work has mostly been carried out during blockades lasting several weeks in order to maximise efficiencies and reduce costs. Often threatened with closure,

the Settle – Carlisle route received little investment for decades but is now being used by heavy coal trains from Scotland.

The construction train will lay up to 600 yards of track with continuous welded rail in a night shift, and is scheduled to renew a total of 23 track-miles during the coming summer at 22 sites. Most are on the Down (northbound) line north of Appleby, but seven are south of Appleby on the southbound line. The project will cost £12m.

NR's Route Director, London North Western, Jo Kaye said that

the track renewals would bring total investment in the Settle – Carlisle route over the last five years to around £100m, including structures and signalling.

'This is an incredible amount of money when you consider that British Rail wanted to close it completely not so many years ago', she added. 'Since those dark days the line has gone from strength to strength. Passenger numbers have rocketed thanks to the efforts of train operator Northern and the various voluntary organisations that promote the line.'

## Passenger-km growing again in Q3

After two quarters during which passenger-km dropped below levels achieved in the previous year, Q3 of 2009-10 saw a pronounced recovery in rail usage according to ORR National Rail Trends data published on February 11. Total pass-km at franchised TOCs from October 1 to December 31 2009 were 12.9 billion, equalling the highest quarterly levels ever recorded in Q1 and Q2 of 2008-09.

It is worth noting that the last 15 days of December 2009 saw unusually severe winter weather which inevitably had some impact on performance (RBI359 p5), although the railways actually coped better than road and air transport which may also have resulted in some diversion to trains.

The total Q3/Q3 increase

for which results are now available was 2.4%. London & South East TOCs were down 2%, with Regional operators up 4% and Long-Distance showing a healthy increase of 7%. ORR warns these figures are approximate and subject to year-end adjustment.

Looking at the Moving Annual Average for pass-km, it stood at 50.3 billion on December 31 2009 which is 0.8% lower than the record 50.7 billion achieved in 2008-09, despite the onset of recession. Apart from a dip in 2000-01 following the Hatfield derailment, pass-km travelled have increased every year since 1994.

If the current Q4 result proves to be a few percentage points up on the very poor figures seen at this time last year, it is just pos-

sible that a new pass-km record could still be set for 2009-10 despite the worst recession for many decades.

Franchised passenger revenue was £1.57bn in Q3 2009-10, up 5-6% on the previous year. Sector increases were 8.9% for Regional, 6.3% for Long-Distance and 4.2% for L&SE.

★ With the aim of disseminating data as effectively as possible, ORR has been conducting an on-line industry survey, which closed on February 15, as well as a range of interviews. 'It is vital that the rail sector has ready access to reliable and useful information so that it can continue to improve standards of service, safety and efficiency for rail users', said ORR Chief Executive Bill Emery.

## MPs back Manchester Hub and electrification

A report published on February 15 by the Commons Transport Committee on priorities for rail investment takes as given enhancements approved for Control Period 4, and concentrates on the critical decisions now to be made for CP5. 'The next funding settlement

for 2014-19 is not likely to be so generous', it warns. 'Strict prioritisation of projects will be necessary and difficult decisions have to be made'.

Top of the committee's list for CP5 is investment to increase capacity within the Manchester Hub, the subject of a report due to be published by Network Rail on February 16. The MPs point out that 'London has benefited greatly from the CP4 package, and is likely to benefit further' from projects such as Crossrail, funded largely outside NR's regulatory settlement.

'The current capacity constraints of the Hub are constraining rail growth across the whole of the north of England. The case for making the Manchester Hub the top-priority capacity scheme for

the next Control Period appears very persuasive'.

Next on their CP5 menu is electrification which 'should be considered one of the top priorities'. Having been assured by NR that as the first 50 miles of the Midland Main Line from London are already electrified there would be 'a large number of train-miles electrified for a relatively small number of track-miles electrified', the committee concluded that MML should be the major electrification project for CP5.

However, their report also backs 'small-scale infill electrification projects' because 'they are often relatively cheap and represent particularly good value for money'.

The committee is more cautious in supporting new high-

## Ipswich chord design

Jacobs Engineering has been appointed by Network Rail as design partner for two projects costing £53m that will increase capacity for intermodal trains between Felixstowe and Peterborough. This is part of the programme to clear the Felixstowe – Nuneaton route for the W10 loading gauge, as there is currently insufficient capacity to accommodate the extra traffic to be generated by the ability to carry 9 ft 6 in high containers on conventional wagons.

One project currently costed at £18m will see two 775 m refuge loops created along the east side of Ely station, making it easier to regulate the movement of trains over the 5 miles of single track between Soham and Ely Dock Junction, and also through Ely North Junction.

A far more difficult task in terms of securing planning approval will be construction of an east-to-north chord in the northern suburbs of Ipswich, enabling trains to run directly between the Felixstowe branch and the Great Eastern Main Line (RBI357 p1).

To minimise land-take in a built-up area, the chord is expected to be only 1 km long. This will produce a curve with a very tight radius because trains will have to turn through an angle of well over 100° in that distance. The cost is expected to be £35m.

Work on both these projects is expected to start in 2012 and be completed in 2014. NR says container traffic within the UK is expected to more than quadruple by 2030 with an increasing share moving by rail. The Felixstowe – Nuneaton upgrade alone should see up to 750,000 lorry journeys a year transfer from road.

speed lines. Several witnesses had shared the concern of Virgin that Britain 'could not afford an investment holiday' on existing routes like the West Coast Main Line, which would reach full capacity by the end of this decade.

The MPs call on the government to explain in its forthcoming response to the HS2 study (p7) 'how this balance will be struck, the mechanisms by which a high-speed line would be funded, and how investment on the classic network will be maintained at an appropriate level'.

This must include 'at the very least' maintaining funding for the Strategic Freight Network through CP5 'in the context of the UK's climate change targets'.

### Printbite

'Rolling stock is required urgently in several parts of the country. We urge the government to set out its revised rolling stock proposals as soon as possible to provide the industry with certainty about future capabilities and to improve the travelling experience of passengers on overcrowded parts of the network.'

#### Priorities for Investment in the Railways

Commons Transport Committee  
February 2010

# DB Regio signs Tyne & Wear Metro contract

On February 2 DB Regio Tyne & Wear Ltd signed a nine-year contract with Nexus to operate the Tyne & Wear Metro from April 1 (RBI356 p2). The contract runs for a term of seven years with a two-year extension option, dependent on performance.

The agreement unlocked a DfT

funding package expected to be worth 'around £580m' which was confirmed on February 3 by Transport Minister Sadiq Khan.

DfT funding is split into two portions. Up to £350m is now available for infrastructure upgrades and rolling stock refurbishment, the Metro's fleet of 90 twin-car trainsets being almost 30 years old.

The upgrade programme is expected to last 11 years, with early projects including station modernisation at Central Station and Monument. The balance of £230m is operating subsidy over the nine years of the DB Regio contract.

'Our ambitious modernisation plans, combined with a concession secured with a new operator to run

## Concession commitments

- Increase the number of trains operating at peak times from December 2010;
- Improve punctuality and reliability;
- New refund scheme compensating passengers for all delays in excess of 15 min;
- Refurbish rolling stock fleet as part of Nexus-funded modernisation programme;
- Fund major improvements at Gosford depot to improve train reliability;
- New standards for station and train cleanliness;
- Deploy a minimum of 18 security staff on the network every evening.

trains and stations on our behalf, will deliver real improvements', said Nexus Director General Bernard Gar-

ner. 'This has been a long process at a difficult time but we have won significant improvements in passenger service and excellent value for money'.

Some 400 staff currently employed by Nexus including drivers, station and rolling stock maintenance personnel are to transfer to DB Regio. Another 270 will remain with the PTE.

Nexus will continue to set service specifications and fares, which were frozen for 2010. It will pay DB Regio agreed sums over the length of the contract to 2020, including bonuses or penalties related to performance, particularly in relation to train operations, service quality and revenue protection. ■

## Soundbite

'DB will be able to use our experience on London Overground and Chiltern Railways in fine-tuning Metro operations to achieve standards set when it first opened in 1980, when it was rightly considered among the best in the world.'

**Adrian Shooter**

Chairman, DB Regio Tyne & Wear Ltd  
February 5 2010

# Champion wants action on station standards

Four months have passed since DfT's Station Champions Chris Green and Sir Peter Hall published a strategy for bringing all 2 535 stations on the national network up to minimum standards that match the number of passengers using them (RBI355 p6).

Addressing the Railway Study Association on February 3, Green said that their report had been published 'for consultation', although there is no intention to produce a definitive version when consultation ends this month.

The report sets minimum standards for six station categories, ranging from the big city terminals mostly managed by Network Rail in Category A down to unstaffed halts in Category F (right). 'Having got these standards it is hugely important how we apply them', Green stressed. 'If we just write them down and file them, nothing is going to happen. So how do we incorporate them into the system in

a reasonably consistent way?'

On January 20 the stations report was reviewed at a conference chaired by Transport Secretary Lord Adonis. There was support for including an obligation to upgrade stations when inviting bids for franchises, and monitoring the outcome through the established passenger satisfaction surveys conducted by Passenger Focus (p5).

Pointing the way forward is the current South Central franchise. According to Green, Southern 'has committed to raising station satisfaction from 73% for the Sussex & Coast services to 82%, and a slightly smaller number for the inner-suburban routes, and that is going to be an absolute key number for them. They have committed to upgrading 34 stations and investing £25m to do it. That's a firm number'.

Southern is also 'committed to 1 100 extra car-parking spaces and 1500 extra cycle spaces, and staffing all their suburban stations

because that was what TfL wanted', he added. Green noted that DfT 'is either having to pay more subsidy or get less premium, so this is quite a step forward'.

Consultation is now underway on the replacement InterCity East Coast, Greater Anglia and Essex Thameside franchises (RBI359 p1), and responses have been invited on upgrading stations, amongst other improvements.

But there is a long way to go before it is clear whether applying minimum standards to stations, with the necessary investment rewarded through higher subsidy or lower

premia dependent on achieving specific passenger satisfaction scores, is going to feature in this franchising round. The forthcoming general election introduces a new and critical dimension of uncertainty.

As Green put it 'I just have a nagging feeling in the middle of a recession. Is the government going to sign up to it with blank cheques, or are they going to want to know a bit more? The one that worries me most is minimum standards, because that's where the Treasury really has got to accept that it is going to get a bit less, or pay more subsidy'. ■

## Station categories

Category	No of stations	Average daily passengers per station	% of passengers
A National Hub	25	90 000	42
B National Interchange	66	13 000	15
C Important Feeder	275	5 000	20
D Medium Staffed	302	2 500	13
E Small Staffed	675	700	8
F Small Unstaffed	1 192	100	2
<b>Total</b>	<b>2 535</b>	<b>111 300</b>	<b>100</b>

## IN BRIEF

★ ATOC has appointed HSBC Merchant Services to manage all credit and debit card payments for its member TOCs. Involving over 3 500 outlets, the new payment card acquirer agreement is expected to produce savings of around £8m over the next five years.

★ National Express East Anglia is to introduce wi-fi for all inter-city passengers before the end of 2010, having secured a grant of £346 000 to fund equipment installation from the East of England Development Agency as well as Norfolk and Suffolk county councils. 'The business case for investment in wi-fi on the London to Norwich route is compelling', said EEDA Chair Richard Ellis.

## Leeds gets first cycling hub

In their Better Rail Stations report for DfT, Chris Green and Sir Peter Hall praised the way passengers in the Netherlands are encouraged to cycle to stations, with 39% using this mode compared to 2% in Britain.

On February 3, Green said 'it is massively impressive to see what they have done. This is a world example of how you can motivate people in the way they access stations. The Department for Transport is going to start developing these Dutch ideas, and has managed to put £14m on the table to be spent now. The aim is to provide storage for a 5% share of people cycling to the station'.

He was pleased that DfT had

embraced 'the iconic idea of new cycle hubs like the Dutch ones, where in one building you've got free storage if you want it free, you've got secure storage if you want to pay, you've got cycle repairs, you've got cycle hire'.

Better Rail Stations noted that 'a typical Dutch inter-city station would store 4 000 cycles, but at Leiden this rises to 9 000 and their plan is to more than double this to 22 000 in the near future'. The report noted that 22 000 is ATOC's estimate for the total cycle storage provided at all British stations.

Such a hub is effectively 'a complete building for cycles, and Leeds is going to be the first one', said Green. 'There are 10 now committed around the country, so A and B stations will have cycle hubs particularly in

the areas where people are likely to cycle. Everywhere else you will have storage for 5% to cycle'.

Visited by Transport Secretary Lord Adonis last month to mark the start of work, the Cyclepoint at Leeds station is due to open in May, offering 'secure, fully-manned storage' for over 300 cycles as well as a repairs service, cycle hire and cycling information. The project is being led by Northern Rail and its parent Abellio (a subsidiary of Netherlands Railways) in partnership with DfT, Network Rail and West Yorkshire PTE.

'More and more people are turning to cycling as a healthy, green and convenient way to travel', said Adonis. 'I want to encourage this choice which is why we're investing £14m to transform facilities for cyclists at train stations'.

# 83% of passengers are satisfied

On February 4 Passenger Focus published the results of the autumn 2009 'wave' of the National Passenger Survey, which revealed that 83% of passengers had deemed the overall service they had received to be good or satisfactory.

According to the passenger watchdog, 'what continues to annoy passengers is the way delays are managed by the industry and a poor performance in this area often results in passengers reporting greater dissatisfaction with the train company'.

Passenger Focus Chief Executive Anthony Smith said 'the recent snow and industrial action, as well as the NPS results, tell us the industry has a long way to go when it comes to managing disruption. First Capital Connect, for example, has a lot more to do to restore their passengers' faith – boosting the mean compensation package on offer for recent poor performance would be a good start'.

Up to now, RBI has not published NPS data on a regular basis, mainly because the volume of data gathered

**Table I. National Passenger Survey overall satisfaction scores\***

TOC	Autumn 2009	Autumn 2008
Chiltern	91	90
Merseyrail	91	90
c2c	90	90
ScotRail	90	90
TPE	89	83
NXEC	89	88
Virgin Trains	89	84
London Midland	87	80
SWT	86	87
ATW	86	86
CrossCountry	85	84
EMT	84	81
FGW	82	80
London Overground	82	77
Southern	82	83
Northern	82	82
Southeastern	80	80
NXEA	79	77
FCC	75	78
<b>National total</b>	<b>83</b>	<b>83</b>

\* % of passengers responding 'satisfied' or 'good'.

for all TOCs and open-access operators is very large. However, NPS targets for customer service, trains and stations are now being written into

replacement franchises (RBI359 p6).

Table 1 lists the overall NPS scores for each TOC as of autumn 2009, compared with the year before to avoid seasonal effects. It should be noted that the national score includes non-franchised operators such as Heathrow Express (Table II), and at 83% last autumn was at its highest level since the launch of NPS in 1999. ■

**Table II. NPS overall satisfaction scores, non-franchised operators**

Company	Autumn 2009	Autumn 2008
Wrexham Et Shropshire	98	n/a
Grand Central	95	n/a
Heathrow Express	93	93
Heathrow Connect	90	88

## Soundbite

'Passengers have sent the rail industry a clear message that there is significant room for improvement – they are not happy with facilities and services at stations and on trains, the availability of staff, how well train companies deal with delays and the value for money their train ticket provides.'

**Anna Walker**

Chair, ORR  
February 4 2010

## Soundbite

'The fact that passengers consistently rate open-access above franchised operators should send a clear message that open access has an important role to play in rejuvenating and growing Britain's railways.'

**Tom Clift**

Managing Director, Grand Central  
February 4 2010

## SHAREWATCH

	11/1/10	18/1/10	25/1/10	1/2/10	8/2/10	15/2/10
Eurotunnel	€6:83	€6:83	€6:04	€6:04	€6:04	€6:04
Arriva	503	496:8	473:1	488	491:1	488:3
FirstGroup	410:6	388:8	369	369:3	350:2	336
Go Ahead	1348	1367	1350	1351	1336	1325
National Express	199:9	198	206:8	207:9	201:5	197:7
Serco	520	527	514	500	499	503
Stagecoach	177:2	179:5	175	176	172:9	170:8
<b>TOC Index</b>	<b>3 159</b>	<b>3 157</b>	<b>3 088</b>	<b>3 092</b>	<b>3 051</b>	<b>3 021</b>
WS Atkins	637:5	625:5	600:5	595	557	556:5
Balfour Beatty	276:9	278:6	277:3	267:4	262:5	259
Carillion	309	310:3	302:5	298:8	284:4	275:5
Jarvis	15:25	15:75	14:5	14	12:5	12:25
Scott Wilson	99:75	107	102	98:5	100	93

# Crossrail enabling works awarded

Crossrail Ltd announced on February 4 that it was to award the first six contracts (below) for enabling works under framework agreements. These agreements covering site facilities, demolition, civils and utilities had been awarded to 17 companies in April 2009.

Managed by Network Rail on behalf of Crossrail, preparatory work at the Royal Oak portal began late last month. A 190 m long box with diaphragm walls is being built to launch the first TBM next year, with work on the western portal itself due for completion in 2014.

'The first tangible signs of preparations for Crossrail's epic tunneling journey under central London are now visible at Royal Oak', said Crossrail Chief Executive Rob Holden. 'Over the coming months construction work on the western portal will advance, allowing delivery

and construction of the first tunnel boring machine ahead of tunnelling commencing in late 2011'.

Award of the first two major tunnelling contracts is expected by mid-2010, from a shortlist of bidders announced last December (RBI357 p10). 'The remaining third contract will be awarded at a later date', said Crossrail.

On February 11 Transport Minister Sadiq Khan switched on the pumps that will drain 98 million litres of water from behind a coffer dam built in the North Dock on the

Isle of Dogs, the site of Crossrail's Canary Wharf station. TBMs are due to reach the station box in summer 2012, with completion scheduled for 2015 and the start of operations in 2017.

'Work on Canary Wharf station is on time and on budget', said George Iacobescu, Chief Executive of Canary Wharf Group plc. The property company is building the new station for a fixed price of £500m, of which £350m is being met from the total Crossrail construction budget of £15.9bn. ■

## Crossrail enabling works

Package Scope	Contractor	
C209	Farringdon demolition, Eastern ticket hall	Keltbray Ltd
C223	Bond Street Eastern Et Western ticket hall	Select Plant Hire Company Ltd
C225	Liverpool Street site facilities	Select Plant Hire Company Ltd
C244	Whitechapel working platform over East London Line	Kier Construction Ltd
C271	Paddington site facilities, piling and groundworks	Carillion plc
C330	Royal Oak portal	Costain Skanska JV

# Nomad connects Virgin trains

Over 500 000 passengers have already used the high-speed wireless internet service on Virgin Trains, data communications provider Nomad Digital announced on February 11. The number of monthly users now stands at over 90 000.

Provided since April 2009 by Nomad in partnership with T-Mobile, the Hotspot service enables passengers to access the internet and e-mail as well as other applications. First class passengers and subscribers to T-Mobile's 'pay monthly' broadband services pay no extra charge, while other users can purchase Hotspot passes online using devices enabled for wi-fi.

'Enabling high-speed data connectivity to trains provides numerous opportunities to deliver innovative services for passengers', said Nomad Digital Chief Executive Graeme Lowdon. As well as equipping Virgin's Class 390 and Class 221 trainsets, the project has involved the provision of high-bandwidth wireless connectivity in tunnels and other areas where mobile reception is usually poor or non-existent, drawing on Nomad's experience at Heathrow Express and on Southern's London – Brighton route, '85 km of quite challenging geography'.

Lowdon told RBI that there remained 'a lot of opportunity' in the UK retrofit market, but new-build is also a possibility. He described the core specification for IEP (p1) as a 'landmark' in requiring broadband wireless connectivity for passengers which was 'no longer considered to be an add-on'.

But as well as passenger-facing applications including information and entertainment systems, plugging trains into a high-bandwidth wireless communications network has enormous potential for operators, enabling them to locate rolling stock and monitor onboard equipment. CCTV images can also be transmitted in both directions, and Nomad has conducted trials in the USA where images from cameras monitoring level crossings were displayed in real time in the cabs of approaching trains.

'Technically, it's entirely deliverable', said Lowdon. 'We see ourselves as the market leader in delivering IP services on trains'. ■

# East Coast SET deployment in detail

As outlined in DfT's consultation document for the replacement InterCity East Coast franchise (RBI359 p1), initial funding for the IEP train service provision contract should provide sufficient full-length (1+9) bi-mode Hitachi Super Express Trains to replace the 13 East Coast HSTs. RBI expects a like-for-like replacement with 13 bi-modes covering 11 diagrams.

Under what is now known as Package 0, these trains are due to enter service in May 2014 following acceptance testing. In effect,

Package 0 replaces the previously planned pre-series build. Because of what DfT terms the SET's 'plug and play' architecture, it will be possible to form all electric and bi-mode configurations for acceptance testing, from five up to 12 cars, from the 13 full-length bi-modes.

Completing current East Coast requirements would be Package 1 to replace the five Class 180 DMUs to be operated by East Coast with half-length bi-mode SETs. A number of Class 365 EMUs operating on Great Northern Cambridge

and King's Lynn services would also be replaced by half-length electric SETs.

All Package 1 trains are due to enter service with the 2016 ECML timetable, which should reflect the diversion of some Great Northern services under Key Output 2 of the Thameslink Programme in December 2015.

Package 1 is expected to cover 22 diagrams from 24 half-length electric and bi-mode SETs. The electric Class 365 replacements would run as 10-car formations

during the peaks. Not only would a 10-car SET have more capacity than a 12-car Class 365 on King's Cross - Cambridge services, but once on the ECML south of Hitchin it could be pathed among the 125 mile/h East Coast services through the double-track bottleneck over Welwyn Viaduct, improving line capacity.

Replacement of the East Coast IC225 fleet is now an option later in the IEP delivery schedule, known as Package 5. If it goes ahead, the electric IC225 fleet would be released in 2017-18. ■

## ECML delivery programme

Package	Duty	SET type	No of diagrams	No of vehicles	Delivery start	Delivery finish	In service
0	IC125 replacement	Bi-mode 10-car	11	130	July 2012	June 2013	May 2014 <sup>1</sup>
1	ECML stoppers/Cambridge	Electric and bi-mode five-car	22	120	December 2015	July 2016	December 2016
5 (option)	IC225 replacement <sup>2</sup>	Electric 10-car	n/a	n/a	2017	August 2018	2018

1. Date for completion of acceptance testing.  
2. 30 sets.

## How the Super Express Train has evolved

Since Agility Trains was declared as preferred bidder for the Intercity Express Programme over 12 months ago (RBI336 p1), there have been several significant changes to the design of the Hitachi Super Express Train which forms the basis of its bid. At the same time, like-for-like replacement of eight-car HSTs has been dropped following the decision to electrify the Great Western Main Line.

As reported in RBI357 (p2), the 10-car bi-mode SET is no longer configured with one 2 MW electric traction package plus a 2 MW diesel 'power house'. This would have required extensive operation of the diesel engine when running under the wires to keep to the timings set for the 4 MW electric SET.

Now the bi-mode will have two electric traction packages, the same as an all-electric SET, with the diesel power house no longer required to provide assistance. According to DfT insiders, the amortised additional cost of the extra pantograph/transformer car is more than offset by reduced diesel engine maintenance costs.

Another example of redesign compared with the specification released in February 2009 is the diesel-powered auxiliary generator unit. In the original train formation there was a single AGU, either under an unpowered car in the 10-car unit or under one driving vehicle of the five-car unit. Presumably to improve weight distribution and simplify packaging, the 10-car SET forma-

tion now has two AGUs, one under a driving car and the other under a trailer vehicle.

Retention of the AGU, a feature not considered necessary by any other operator of high-speed intercity trains, follows extensive analysis including a financial business case. One argument for the AGU is that it reduces the weight of batteries needed to keep services such as ventilation and lighting running in the event of a traction power supply failure for the time specified by European requirements.

Average weight of the 26 m SET vehicles, excluding the driving cars, is reported at just over that of a 23 m Mk IV coach that forms the basis of the IC225. A second class Mk IV coach weighs 40 tonnes, suggesting

some slight weight creep over the 39.45 tonnes previously quoted by Hitachi for SET.

To maximise operational flexibility, including accommodating expected passenger growth, both electric and bi-mode variants will now be potentially available in all lengths between five-car (half-length) and 10-car (full length), plus the option of extended 11 and 12-car formations.

However, the five IEP packages including GWML post-electrification will require five, eight and 10-car electric SETs and five, seven, nine and 10-car bi-modes inclusive of the power house. In the case of the 11 and 12-car bi-modes, these lengthened versions would retain a single diesel power house. ■

## Thameslink train procurement slips back again

DfT's deadline for selecting by March 25 the preferred bidder for the new Thameslink EMU fleet has slipped back to July. Financial close is now scheduled for December 21 2010.

According to industry insiders, the different financial structures of the two remaining bids are continuing to frustrate attempts to create a common basis for comparing the train service provision offers from Bombardier and Siemens. The Treasury is also reported to have imposed more severe claw-back provisions compared with other PFI deals.

After such major long-term

contracts are signed, the commercial risk reduces which allows the transaction to be refinanced at more favourable terms. In such cases, the standard Treasury requirement is for the government to receive 70% of any gain above a pre-determined rate of return. But for the Thameslink train service provision deal, the claw-back on future refinancing has been increased to 90%.

Treasury concern over Thameslink is emphasised by a further requirement. Banks funding the deal are now required to cover the risk that the supplying consortium might not be able to

finance the second batch due to a downgrading of the credit rating of the train manufacturer.

At the same time, the delivery schedule is now to be phased over three batches in place of two, as DfT policy on the eventual train frequency through the Thameslink central core appears to be in flux. The three batches now start with 10 full-length trains to be delivered by April 2014. Batch 2 would enable a frequency of 20 trains/h to be operated through the core, and Batch 3 would provide the additional trains needed to step up to 24 trains/h. ■

## SET beat target price

Consultants produced a 'shadow price' to inform DfT's evaluation of the bids for IEP, setting a benchmark of £2.5m for a 26 m long vehicle. According to industry insiders, the initial bid from the Bombardier/Siemens consortium was over £2.75m, subsequently reduced to £2.4m in the final offer.

Hitachi is understood to have won on both technical evaluation and on value for money. This suggests a price of just over £2m per vehicle. With 250 vehicles for the ECML plus two depots, this correlates with price estimates of £600m to £700m for the East Coast train service provision deal. ■

# High speed to Manchester would cost £27.5bn, finds PwC

In a report for Greengauge 21 published on February 11, PricewaterhouseCoopers concludes that a high-speed line running from London to Manchester via Birmingham could be built at a total real cost to the public purse of £27.5bn. Following design development and obtaining planning consent in 2011-15, the net cashflows (Table 1) projected by PwC assume that construction under a 38-year concession would start in 2015, with operations commencing in 2021.

'We have assumed that high-speed rail services will earn in passenger revenues substantially more than they cost to operate', say Julian Smith, Global Head of Rail & Transport Infrastructure

at PwC, and co-author Charlie Johnson-Ferguson. 'However, there is insufficient surplus to make a great contribution to the infrastructure costs particularly once account is taken of the worsening in the financial performance of the classic lines. Therefore, significant public-sector expenditure will be required to deliver the capital elements of the project'.

However, the authors point out that their funding analysis excludes optimism bias which is a feature of business case appraisal. 'Its inclusion here would add 65% or £17.3bn to the costs and have the effect of increasing the costs to the public purse to £43.7bn'.

The report contains an illus-

trative delivery and financing structure that would see the government establish a procuring authority and delivery company (DeliveryCo) that would tender a contract to build the high-speed line. The winning bidder would form a special-purpose vehicle (InfrabuildCo), with the DeliveryCo making milestone construction payments to meet costs that could not be met through finance raised by the SPV itself.

A separate SPV known as InfraCo would manage and operate the high-speed infrastructure for a concession period of between 30 and 40 years. InfraCo might initially be owned by the government, 'but could be floated or sold to private or trade investors once construction is completed'.

DeliveryCo would also tender 'one or more operating franchises' for train services, although the report suggests that open-access operators might also emerge. It is assumed that the high-speed TOC 'would also operate the adjacent

classic network, at least during the construction and initial operation phase, so that the transition to high-speed rail services can be managed more efficiently and shortfalls in revenue on one network might be offset by revenue on the other'.

Rolling stock would be provided by a separate SPV under a long-term design-build-finance-maintain contract awarded by the DeliveryCo. 'The detailed structure would be able to draw on lessons from the Intercity Express, Thameslink and Cross-rail train procurements', says the report. ■

**Table II. Breakdown of total cost, £bn**

Design and consent work	(0.5)
Infrastructure construction and maintenance	(13.8)
Rolling stock construction and maintenance	(6.0)
Financing costs including tax	(7.5)
Net income from high-speed operations	35.9
Abstraction from conventional network	(35.6)
<b>Total cost to government</b>	<b>(27.5)</b>

**Table I. Cost to the public purse, £bn at 2008 prices**

	2011-15	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026-53	Total
Government receipts/(payments)	(0.5)	(1.4)	(1.4)	(1.4)	(1.7)	(1.7)	(1.3)	(0.1)	0.0	0.1	0.2	17.2	8.1
Net impact on conventional network	-	-	-	-	-	-	-	(0.3)	(0.4)	(0.5)	(0.6)	(33.7)	(35.6)
<b>Total project cost to government</b>	<b>(0.5)</b>	<b>(1.4)</b>	<b>(1.4)</b>	<b>(1.4)</b>	<b>(1.7)</b>	<b>(1.7)</b>	<b>(1.3)</b>	<b>(0.4)</b>	<b>(0.4)</b>	<b>(0.4)</b>	<b>(0.4)</b>	<b>(16.5)</b>	<b>(27.5)</b>

## White paper in March?

Following the delivery of the final report by High Speed 2 Ltd on December 31, Transport Secretary Lord Adonis is now expected to publish his white paper on high-speed rail development before the end of March.

According to industry insiders, Adonis has reached agreement with the Treasury to provide funding for high-speed development over the next few years, on the basis that major expenditure will not be required before the start of construction around 2017.

The government is expected to provide sufficient funding in the forthcoming budget to cover the public consultation and planning process, together with the next stages of detailed engineering design. This would enable Adonis to make a statement shortly after the Chancellor presents his budget, and before Parliament is dissolved for the general election. ■

## Greengauge 21 studies Heathrow opportunity

'With ministers shortly to announce their conclusions from the work that has developed the case for the nation's second high-speed line, from London to the West Midlands, now is the time to get the right strategy for high-speed rail and Heathrow', says a report published by Greengauge 21 on February 12.

The report proposes a Heathrow Interconnection Network of conventional and high-speed rail as 'the key to achieving a new vision for Heathrow, broadening its national catchment while allowing the airport to better target its medium and long-haul flight network'.

With an incremental benefit:cost ratio of 4.8:1 and a capital cost of £3.2bn including optimism bias, the network would comprise 28 km of new construction. A spur would run

south from HS2 to a high-speed station at Heathrow, also connected to the Great Western and South Western main lines. These new links would be used by conventional regional services, as proposed by Arup in its Heathrow Hub concept (RBI336 p7).

Greengauge 21 says it has identified three potential sites for a high-speed station at the airport: to the west of Terminal 5, on the north side of the site between the runway and the A4, or as part of Terminal 6 that would be built with the third runway.

'These now need to be the subject of a study by government to develop the best option', says the report. Connecting Heathrow to the national rail network would allow the airport 'to serve the whole of Britain effectively' according to Greengauge 21 Director Jim Steer. ■

### Printbite

'High-speed rail is too large and complex for the private sector to deliver without considerable government support. For it to be a success, government will have to play a significant role in the planning, specifying, funding and procurement of high-speed rail.'

**Fast Forward Funding Report**  
February 2010

### IN BRIEF

★ On February 12 Clackmannanshire and Fife councils received a report prepared by Scott Wilson for the South East Scotland Transport Partnership on re-opening the Alloa - Rosyth route to passengers. It recommends extending the hourly Glasgow - Alloa service to Edinburgh with new stations at Clackmannan, Kincardine and Cairneyhill at a total cost of £65m.

★ Siemens is now sole bidder to provide the rolling stock required for nine four-car EMU diagrams at London Midland. Early contract award is considered unlikely following the rejection of DfT's proposal to cascade Class 321 and 322 units to Northern from LM and ScotRail respectively, releasing Class 323 EMUs to strengthen the existing LM fleet.

★ First GBRF has been awarded a three-year contract worth £2m by Rio Tinto Alcan to move coal, alumina and other materials from Blyth and Steadburn to Lynemouth and Lochaber. The freight operator will also be developing a solution for moving finished products from Lochaber near Fort William to Lynemouth and Blyth.

## Pointers for mid-life refurb

With the Eurostar fleet approaching its mid-life overhaul after more than 15 years in service, the review outlines opportunities for more permanent changes. This also exposes the lack of a technical design authority for the Eurostar trainset.

According to Chief Executive Richard Brown, the current management structure of Eurostar means that common maintenance standards have not been applied by the three organisations involved, so that 'each railway does it their way'. Because of this no single party has been responsible for pulling service histories together, noting and analysing endemic problems and implementing permanent solutions across the Class 373 fleet (p9).

For example, cooling of power electronics in the common bloc and motor blocs exposes components to contamination. The review says that Eurostar should look at improving ventilation and cooling. This is something which Eurotunnel has done with its shuttle locomotives where metal dust in the tunnel is a particular threat to electronic equipment.

Eurotunnel has mounted electronic equipment in sealed cabinets. The air inside is cooled through heat exchangers, isolating equipment from the flow of tunnel air.

With Eurostar now running on HS1, pantograph clearance in the UK is no longer a major issue. The review recommends that the power car roof could be redesigned, reducing the depth of the well and increasing the clearance above the inductors.

Long-term modifications are now to be developed by Eurostar with train builder Alstom and SNCF. ■

# Redundancy defeated by design

A key question answered by the Eurostar Independent Review (p1) is how five trains with traction systems designed to provide an unprecedented degree of redundancy could be brought to a complete halt by melting snow and condensation entering electrical equipment. To meet Channel Tunnel safety requirements, Eurostar trainsets were designed to be driven out of the tunnel in the event of fire, if necessary leaving a failed power car or even half the train behind.

Given that only two functioning motor blocs are required to exit the tunnel, RBI asked review Joint Chairman Claude Gressier whether it was possible, given the high level of redundancy, for the traction system to suffer total failure. According to Gressier, the driver of one of the trains reported that he had lost motor blocs but still had sufficient to exit the tunnel. But then, 'bang! He lost them'.

### How the trains failed

**Train 9157.** Lost five motor blocs: two electronics failures, one inductor arcing, faulty voltage detection circuit, over-voltage.

**Train 9053.** Motor bloc and electronics failures not specified.

**Train 9057.** Lost three motor blocs: one electronics failure, one inductor arcing, one over-voltage. It then lost a fourth bloc, also due to over-voltage in the power factor correction circuits in the common bloc which had not received the over-voltage reduction modification.

**Train 9055.** Lost four motor blocs due to inductor arcing or arcing in the power factor correction circuits.

**Train 9059.** Failed with a digital data network fault.

### Soundbite

'We cannot say "it is the wrong kind of snow".'

**Claude Gressier**

Joint Chairman

Eurostar Independent Review

February 12 2010

Analysis of the cause of failures in the report highlights the vulnerability of the motor blocs, and in particular their inductors. Also known as chokes, these are wire coils which are used to smooth out variations in alternating current. The inductors in Eurostar power cars are mounted on top of their motor blocs with the coil housed in an aluminium cover. The covers should have a resin insulating coating.

Because of gauge clearance requirements on the original Eurostar route between Waterloo International and the Channel Tunnel,

the pantograph on each power car is mounted in a deep well in the roof. The motor blocs in the power car are located underneath the well, and because of its depth are very close to the bottom of the well and the roof reinforcing struts.

When the first Eurostar failed in the Channel Tunnel, following trains were held outside on a night when 40 cm of snow fell in the Pas-de-Calais region. The pantograph wells filled up with snow.

With the high temperature and humidity inside the tunnel, warm moist air drawn in by the cooling fans came into contact with the inner walls of the well which were being kept at freezing by the mass of snow. Water condensed on the surfaces and dripped onto the inductors, which then flashed over to the nearest part of the bodywork which was only 2 to 3 cm away. This arcing knocked out the motor bloc circuitry. ■

### Power car design

Each Eurostar trainset has two power cars. In each power car the common bloc takes the incoming AC power supply and converts it to DC for the inverters, which then convert the current back to the variable-voltage, variable-frequency supply for the traction motors. The common bloc has its own internal redundancy.

The inverters are known as motor blocs and each one feeds both traction motors on a bogie. Each common bloc feeds three motor blocs, two supplying the bogies under the power car and one in the adjacent coach supplying the leading motor bogie.

A full-length 18-car Eurostar should be able to exit the Channel

Tunnel with only two motor bogies functioning. The maximum gradient is 1 in 90.

Control signals from the cab are transmitted to traction equipment and other train systems over duplicated data links, using a token ring system. This sends control 'telegrams' addressed to individual items such as the motor blocs. If one of these 'nodes' fails to respond when addressed, it does not prevent telegrams reaching other equipment. The ring design means that telegrams can still be sent even if there is a break in the data link.

In an emergency a power car can be uncoupled, or the train split in the middle after passengers have been transferred to the mobile half.

# Communication breakdown at all levels

The Independent Review records repeated failures in communication, especially in terms of Eurostar and Eurotunnel informing passengers about what was happening. The catalogue of failures includes:

- 'Passengers reported that they did not see any person in authority walking through the train to check on conditions or explain what was happening. They also claimed that they were given little and confusing information';
- 'They [staff] ignored passengers, refused to answer questions and appeared to go into hiding';
- 'There appear to have been no announcements by authorities and passengers had no idea what was happening';

- 'During this period, very few announcements were made, leading to considerable confusion and frustration among passengers';
- 'Very little information was proactively communicated'.

Yet another instance of 'a breakdown in communications' saw the passengers on train 9055 evacuated erroneously onto a relief Eurostar at Cheriton when their own train was due to be hauled to St Pancras.

Summing up, the authors note that 'this review has revealed the need for a far more co-ordinated and robust process for communicating with customers across all channels, including the call centre, website and other media. In

all cases, Eurostar did not provide an adequate level of service.'

A fundamental problem was – and is – the lack within the Channel Tunnel of any communications link between Eurostar train managers and control centres other than via the train driver. This will only be rectified once GSM-R is installed, something which is already planned by Eurotunnel – although the review asks if an interim communications channel could be put in place in advance of GSM-R.

Another difficulty is the split between Eurotunnel's Rail Control Centre and a Crisis Control Centre set up when disruption occurs, and Eurostar's Rail Operations Centre in Lille. The review recommends the establishment of video links

between all three control centres, and also with Eurostar's Gold Command at its head office in London.

Among the more surprising facts to emerge is that there is no variable message display at St Pancras, something which contributed to much confusion at the station after services were suspended on December 19. The review recommends that such a display is erected where currently there is a Eurostar banner. ■

### Soundbite

'Passengers must not go through this experience again.'

**Chris Garnett**

Joint Chairman

Eurostar Independent Review

February 12 2010

# A previous history of failures

According to the Eurostar Independent Review, 'incidents have occurred in almost every severe winter' since 1996.

In 2001 voltage detector circuits failed because of condensation. The most critical circuits were subsequently modified with more modern

technology.

In 2004 and 2005 the common bloc software was modified so that the blocs ran warmer in winter as they approached the Channel Tunnel. This was to reduce the difference in temperature when the train entered the tunnel to reduce

condensation and thermal shock.

Ageing has also increased the vulnerability of the common blocs to internal arcing. Eurostar requires a much greater flow of cooling air than the less powerful TGV power car. This sucks in dirt in the tunnel, including metal dust from brake discs, and the contamination builds up on metal parts, causing arcing between components. This has been remedied by moving some components and using nylon bolts as insulators in critical locations.

In 2009 new cases of arcing were caused by voltage spikes when power factor correcting circuits were switched. A new control card is being fitted to the common bloc but had been implemented on only 21 out of the 54 Eurostar power cars by December 18. ■

## SNCF says 'non'

Another issue highlighted in the review was the refusal of SNCF's national operations centre to allow Eurostar services unable to enter the Channel Tunnel to return to Paris or Brussels. Train 9063, for example, had left Paris at 21.29 with 684 passengers. Held at Calais-Fr ethun, because of the failed trains ahead, the train manager was told at 01.00 that the train would return to Paris, and duly informed passengers.

At 02.00 information was received that the train could not return to Paris, the refusal being explained by 'a lack of hotel rooms close to Gare du Nord (only 40) and the understanding that because the pantograph was still up, the train was warm and comfortable'.

With the train stranded in open country as the night progressed, passengers later asked for the train doors to be opened, but the request was rejected because of the need to preserve the 'sterile environment' required to meet customs and immigration requirements. Continued problems in the Channel Tunnel led to the train being held until around 09.00 before it was finally allowed to return to Paris, arriving at 11.20.

Train 9163, which departed Brussels at 21.09, was similarly affected. This train was held in the Calais area until 09.20 next day as SNCF refused permission for it to return to Brussels that night. It eventually reached Brussels at 11.34. ■

### Worn snow filters to blame

To winterise the Eurostar power cars, screens made of loosely-woven polyester are fitted behind the cooling air intake grilles along the bodysides. The woven material filters air through mesh of 4 to 5 mm square holes.

After 15 years of being installed, removed and stored, these screens are now getting worn. With the very heavy snow in the Pas-de-Calais region last December, plus the high volumes of

air drawn in by the cooling fans, snow built up between the bodyside louvers and the screens.

With the filters blocked, the fans kept on trying to draw in air. The result was that fine snow was sucked in through any available gap, including door seals and cracks in the bodywork.

Snow drawn into the cab was particularly harmful since one electronic cubicle is not fitted with a cover. Other cabinets housing electronic components had doors with inadequate seals and locks.

## Immediate improvements recommended

A number of 'important additional measures' to be taken before next winter are listed in the review. These include finding where snow entered and closing off entry points. Winterisation needs to be improved by ensuring the snow screens are correctly installed and fitting additional screens if necessary.

There is clear criticism of depot maintenance standards in the review. Each of the three national Eurostar depots is in effect autonomous.

One of the Belgian fleet involved in the incident is reported not to have been winterised, while a Paris-based train which failed had only partial screening. The review says that Eurostar must ensure that maintenance

procedures are being followed and critical components kept clean.

There is further criticism of maintenance standards for electronics. Recommendations include ensuring that the data communications network is functioning cor-

rectly, that electronic components are not damaged by condensation, cleaning these components regularly and, as in the cab, protecting them with simple transparent covers where they are currently exposed.

In addition to completing the power factor correction control cards retrofit, the voltage detection circuits in the common bloc need to be modified. Reinforcing concern over standards, the review adds that when printed circuit cards have been modified, Eurostar should ensure that the water-resistant coating has not been damaged.

In the case of the inductors, a fibreglass cover should be fitted. The inner walls of the pantograph well should also be insulated. ■

### Soundbite

'Our priority is to win back the confidence of our passengers by taking all the action necessary to prevent this ever happening again. Our focus now is on fully implementing the recommendations from the review as well as those additional measures that we have identified ourselves to improve our service.'

**Richard Brown**

Chief Executive, Eurostar  
February 12 2010

### Printbite

'We recommend that Eurostar should agree with SNCF as a general rule trains should not be left in the middle of the countryside or in a small station overnight.'

**Eurostar Independent Review**  
February 12 2010

### Eurostar accepts findings

Within minutes of publication of the Independent Review, Eurostar issued a statement in which it committed to implementing all recommendations 'as quickly as possible'. This includes conducting a joint review with Eurotunnel of rescue and evacuation procedures.

Eurostar said that it would invest £18m to enhance the resilience of its fleet and improve passenger care and

communication. A sum of £12m 'had already been earmarked for some time for a new tunnel communications system'.

The additional funding will also include joint purchase with Eurotunnel of two further rescue locomotives.

Implementation of the recommendations will be overseen by a dedicated team at Eurostar, headed by Richard Morris whose appointment as Director of Business & Service Continuity was announced on February 12 (p10).

## Overwhelmed by snow

Continued from page 1

by the report's 21 recommendations. These are train reliability, evacuation and rescue and communications.

As well as the events of December 18-19, the review investigated the way in which Eurostar dealt with passengers when services were suspended for three days in the run-up

to Christmas. While recognising that with 30 000 passengers due to travel each day Eurostar could not have arranged alternative transport for them all, the review found that the contingency plans for assisting passengers were 'insufficient'. The provision of information to passengers at stations, through the Eurostar call centre and via the company website was 'not satisfactory'. ■

## Sequence of London-bound Eurostar trains affected by failures on December 18 to 19 2009

Train	Origin	Passengers	Stopped	Subsequent events	London arrival (GMT)
9157	Brussels (18.59)	679	21.00	Stopped in Interval 1. Hauled by rescue locos to London.	23.45
9051	Paris (18.13)	n/a	—	Delayed but did not fail.	n/a
9053	Paris (18.43)	700	22.38	Stopped in Interval 3. Passengers evacuated by shuttle to Cheriton for transfer to Eurostar relief.	08.56
9057	Marne-la-Vall�ee (19.37)	664	22.40	Stopped in Interval 3, tried to return to France but failed in Interval 6 at 01.00. Passengers evacuated by shuttle to Coquelles which transited Tunnel next morning for transfer at Cheriton to Eurostar relief departing at 10.30.	10.53
9055	Paris (19.13)	639	23.14	Stopped in Interval 4. Coupled to 9059 and pushed by rescue locos to Cheriton for transfer to Eurostar relief.	13.15
9059	Paris (20.13)	630	00.08	Stopped in Interval 4. Coupled to 9055 and pushed by rescue locos to Cheriton for transfer to Eurostar relief.	10.53
9063	Paris (21.13)	684	ca 23.30	Held at Calais-Fr�ethun until 09.20 and returned to Paris, arriving at 11.20.	n/a
9163	Brussels (20.29)	511	23.15	Held at Hondeghe until 06.45. Arrived Calais-Fr�ethun 07.10, departing at 09.20 for Brussels, reached at 11.34.	n/a

London Midland Deputy Chairman **Graham Eccles** and Olympic Delivery Authority Chief Executive **David Higgins** join the board of Network Rail as non-executive Directors this month. Their appointments are due to be ratified at the company AGM in July, when former Virgin Rail Group Chairman **Chris Green** will not be seeking re-election as a non-executive Director.

**Dean Finch** joined National Express Group plc as Group Chief Executive on February 15. He was formerly Chief Executive of Tube Lines (RBI357 p10).

Northern Rail has appointed **Ian Bevan** as Interim Managing Director. Currently Finance Director and Deputy Managing Director, he succeeds **Heidi Mottram** who is leaving to join Northumbrian Water Ltd on March 1 (RBI357 p10). Area Director, East, **Steve Butcher** has been promoted to Interim Deputy Managing Director with specific responsibility for strategic operational and external relations issues. **Stuart Draper** has been promoted to Engineering

Director, succeeding **Ruud Haket** who now leads bids for UK rail franchises at Northern Rail's parent Abellio (formerly NedRailways).

**Jonathan Moser** has been appointed Managing Director of the Energy segment at DB Schenker Rail (UK) Ltd. Previously Deputy Managing Director, he succeeds **Paul Bates** who retired on February 12.

Formerly Managing Director, Delivery, at Crossrail Ltd, **Richard Morris** has been appointed Director of Business & Service Continuity at Eurostar (p9), reporting to Chief Executive **Richard Brown**. Prior to succeeding SNCF President **Guillaume Pepy** as Eurostar Chairman under the company's new corporate structure, Brown is to take up the new position of Deputy Chairman on April 5 when Chief Operating Officer **Nicolas Petrovic** succeeds him as Chief Executive.

Construction and property consultancy Cyril Sweett has appointed **David Young** as Director of Transport. He was formerly Divisional Director (Rail) at Capita Symonds.

Formerly IEP Project Director at National Express East Coast, **Richard McLean** is now Managing Director of DB Regio Tyne & Wear Ltd, whose seven-year contract to operate the Tyne & Wear Metro is due to start on April 1 (p4). Bid Director **Christoph Djazirian** sits on the board of DB Regio Tyne & Wear, chaired by DB Regio UK Ltd Chairman **Adrian Shooter**.

As part of a restructuring programme, **Gren Edwards** is stepping down as Chief Executive Officer of VolkerRail Group Ltd. Chief Operating Officer **Steve Cocliff** is to take up the new position of Managing Director.

Chair of the Civil & Structural Engineering Group at BDP, **Michelle McDowell** has taken up office as Chair of the Association for Consultancy & Engineering. **Lawrence Hughes**, Head of the Water & Energy business at Grontmij, and **Graham Nicholson**, Executive Managing Director of Tony Gee & Partners, are ACE vice-chairmen.

## Newport – Ebbw Vale assessment launched

The hourly Arriva Trains Wales service between Cardiff and Ebbw Vale Parkway is carrying twice as many passengers as forecast when it was launched on February 6 2008 (RBI312 p2). Ieuan Wyn Jones, Minister for the Economy & Transport in the Welsh Assembly Government, has now commissioned Network Rail to design and cost the work needed to introduce a parallel hourly service to Newport.

This follows a study by Halcrow which considered extending the line 1.5 miles through the site of the former steelworks to the centre of Ebbw Vale at a cost of £6.53m. Halcrow also proposed re-doubling

7 miles of track from Cross Keys to the site of Aberbeeg Junction, requiring second platforms at Newbridge and Llanhilleth stations and bringing the total cost to £33m.

It was always the intention to add a second hourly service to Newport, but this was postponed because NR said it required restoration of a facing crossover at Gaer Junction, where the single track connection to the Ebbw Vale line joins the South Wales Main Line. This could be done more cheaply when the Newport area was res-

ignalled.

A WAG spokesman told RBI that NR's new study would take a year to complete, followed by two years to obtain a Transport & Works Act Order. 'We are realistically looking at approximately 2013 to complete this study, subject to ministerial approval', he said.

On a more positive note, he added 'the reinstatement of Gaer Junction is expected to be completed later this year which would facilitate the direct Newport services'.

### 15 years young

With issue 360, *Rail Business Intelligence* completes 15 years of unbroken publication since the launch of *Rail Privatisation News* in March 1995.

At the beginning we were by no means certain how long the restructuring of the UK rail industry would provide sufficient news to sustain a fortnightly business newsletter. But the continuing commercial, political and technical challenges provide ample copy for our pages, as we seek to keep our readers up to date with the essential news and market trends.

Over the years successive governments have wrestled with rail policy – franchising, regulation, infrastructure investment and rolling stock strategies, not to mention the London Underground PPP or the on-off development of light rail – all of which have been faithfully charted in these pages.

Underpinning all of this has been the never-ending debate over funding,

and whether the rail industry is delivering value for money. Whatever the outcome of the forthcoming general election, the need to cut government spending will inevitably raise questions over rail investment projects.

So there will be plenty to report in the years ahead. And RBI's expert editorial team remains firmly focused on bringing you all the essential business news and analysis.

As we enter our 16th year, we would like to thank again all those whose contributions help to make *Rail Business Intelligence* such a success. In particular, we must thank our readers for your continued loyalty.

If you have not yet done so, please can you return by the end of this month the survey questionnaire sent out with issue 359, which will help us ensure that we continue to meet your business information needs as effectively as possible.

**Chris Jackson**  
Editor-in-Chief

## DIARY

**March 22 – 25, London:**  
'MetroRail 2010.' Terrapinn Ltd.  
Tel: 020 7242 2324  
[www.terrapinn.com/2010/metrorail](http://www.terrapinn.com/2010/metrorail)

**April 13– 14, Birmingham:**  
'Building Tomorrow's Railway.'  
Railway Gazette International.  
Tel: 020 8652 5200  
[www.railwaygazette.com](http://www.railwaygazette.com)

**April 13 – 15, Birmingham:**  
'Infrarail 2010.'  
Mack Brooks Exhibitions.  
Tel: 01727 814400  
[www.infrarail.com](http://www.infrarail.com)

**April 29, London:**  
'The Future of Station Design.'  
Murray Media.  
Tel: 01273 204200  
[www.murray-media.co.uk](http://www.murray-media.co.uk)

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