



OFFICE OF RAIL REGULATION

ORR's Annual Report on HS1 2011-2012

HS1 Annual Report
2011-2012

Contents

1. Summary	3
2. Performance and data monitoring	6
Overview	6
Data assurance	6
Monitoring	6
Performance	7
3. Track Access	9
Overview	9
Passenger Access Documentation	9
Freight Access Documentation	9
Discounts	10
Network Statement.....	10
HS1 Network Code	10
4. Periodic Review	11
Overview	11
Periodic Review	11
5. Asset Management	12
Overview	12
Asset planning.....	12
Renewals	13
Asset Condition	13
6. Safety	15
Overview	15
Safety Activities during 2011-12.....	15
Proposed safety activities for 2012-13.....	15

1. Summary

Background

This year has been the first year for HS1 Limited under the leadership of Chief Executive, Nicola Shaw, and the first full year under new ownership. We believe that HS1 Limited has performed well during the year and we are pleased with the progress made in a number of work areas.

This report sets out how we think HS1 Limited has performed during 2011/12 and what we have done during this period. We also outline the work we expect to do in 2012/13.

Performance and data monitoring

HS1 Limited has improved the reliability and accuracy of its performance and asset management data. Given the independent assessment of HS1 Limited's data was the best possible rating, we have not commissioned a further data assurance review. We continue to actively monitor HS1 Limited's data quality, and support its developments to further improve the reliability and accuracy of its systems, data and processes.

Monitoring of operational performance is conducted regularly, and HS1 Limited's performance during 2011/12 has consistently been very good, with only 0.52 % of services being delayed by incidents attributed to HS1 Limited.

Track Access

We continue to work with HS1 Limited on the development of its regulatory framework, including advising it on regulatory implications. This includes the introduction of a discounts policy, ensuring it has in place the appropriate suite of contractual documentation and offering advice on HS1 Limited's revised Network Statement¹.

This year has also seen continued progression with HS1 Limited's commitment to encourage freight services onto HS1. DB Schenker Rail (UK) Limited and Europorte Channel are both operating on HS1 under short term contracts. A demonstration of a TGV Poste train arriving into St Pancras International also took place in March.

HS1 Limited has continued to ensure it has in place the necessary policies and access arrangements to make HS1 accessible to new domestic and international passenger operators, including Deutsche Bahn.

Periodic Review

HS1 Limited is currently in control period 1 (CP1) and its control period 2 (CP2) will start from 1 April 2015. HS1 Limited has demonstrated its commitment to strategic planning for PR14 and we are pleased with the collaborative work achieved to date.

We have engaged with HS1 Limited and the industry to discuss the scope of PR14 and to discuss key workstreams to be taken forward in 2012/13.

Asset Management

HS1 Limited has achieved the milestones it set out for its asset management programme, having delivered the draft asset specific policies which we are currently reviewing. It is on target for completing the 2013 asset specific policies. These policies ensure that assets are renewed and replaced in a timely and efficient manner. Overall HS1 Limited has performed well over the year from an asset management perspective with relatively few infrastructure faults noted across all asset categories. We are content that one of issues we reported on previously, concerning the wheel-rail interface with London and South Eastern Railway Company's (LSER) trains, has largely been resolved. HS1 Limited is working towards developing a set of condition measures for the major asset groups in order to report and enable degradation rates to be assessed.

Planning and preparation for the Olympic and Paralympic Games has progressed well, with appropriate actions and contingency measures being put in place to ensure that the infrastructure is able to provide a high degree of reliability and resilience for the duration of the games.

¹ HS1 is legally required to produce a network statement setting out general information about HS1; conditions of access to HS1 by transport operators; rules, procedures and criteria for allocation of capacity and payments for the same.

Safety

The most significant safety-related event on HS1 was the death of a passenger who fell from a Eurostar train in the Westenhanger area. The individual used the emergency door release to open the door of the train and subsequently fell. No faults were found with the door operating mechanism. There were 16 recommendations in the Eurostar report covering the prevention and management of the incident, allocated to Eurostar, Network Rail (High Speed) (formerly Network Rail (CTRL) Limited), British Transport Police and the UK Border Agency.

During the course of the year, Network Rail (High Speed) applied for, and was granted, renewal of its safety authorisation to operate and maintain the infrastructure. We carried out a number of inspections of Network Rail (High Speed) and no significant deficiencies were identified.

2. Performance and data monitoring

Overview

Monitoring of operational performance is conducted regularly, and HS1 Limited's performance during 2011/12 has consistently been good, with only 0.52 % of services being delayed by HS1-attributable incidents. HS1 has improved the reliability and accuracy of its performance and asset management data.

Data assurance

We monitor HS1 Limited's data to track performance against HS1 Limited's obligations in the Concession Agreement. We therefore need assurance that the reported figures are both accurate and reliable.

In April 2010 we appointed Arup to carry out the first independent review of HS1 Limited's data. Arup concluded that reasonable levels of reliability and data accuracy were being achieved. Arup pointed out that processes and systems were still in early stages of development, and made a number of recommendations to HS1.

In August 2011 Arup concluded their second review of HS1 Limited's data. Arup found significant improvements in all performance and asset management measures, rating all data as A1 (the highest attainable confidence grading). Arup also found that all recommendations made in 2010 (including automation, documentation and processes) had been addressed, which ultimately resulted in the A1 confidence rating.

Arup also reviewed HS1 Limited's Asset Register and concluded that while it is a sound asset management system, improvements could be made to the breadth of data. HS1 Limited has responded by adding the age of equipment, criticality, condition and location data to Asset Register records. ORR welcomes these additions and believes it will significantly strengthen HS1 Limited's asset information.

Given the A1 rating awarded in August 2011, we have not commissioned a further data assurance review. We continue to actively monitor HS1 Limited's data quality, and support its developments to further the reliability and accuracy of its systems, data and processes.

The 2010 and 2011 data assurance reviews are available on [our website](#).

Monitoring

Monitoring of train performance is achieved through quarterly and annual data returns that set out HS1 Limited train service performance against key performance floor targets. Asset management is monitored in line with HS1 Limited's Asset Management Strategy. The annual Asset Management Statement, along with asset stewardship key performance indicators, is used to assess HS1 Limited's performance on maintaining its assets.

Performance

We monitor HS1 Limited's operational performance against the performance floor measures set out in the Concession Agreement. The performance floor threshold sets out the minimum operational standards for HS1 Limited. Performance of HS1 Limited is expected to be at a much higher level than the performance floor measures, which state that the proportion of services delayed by HS1 Limited in a quarter should not exceed 15%. ORR raises any performance issues with HS1 Limited well before it has fallen to these levels. The second full year of data collection ended at the end of March 2012; a summary is provided here:

Figure 1 – HS1 performance in 2011/12

	Total number of trains timetabled in the period	Total number of train services delayed	Number of trains delayed by an incident wholly or mainly attributable to HS1	% of trains delayed by an incident wholly or mainly attributable to HS1	Number of trains delayed by an unidentifiable incident
All services	71,548	5,878	363	0.52%	18
Domestic (St Pancras ↔ NKL via Ebbsfleet)	27,826	1,651	125		11
Domestic (St Pancras ↔ Ashford)	25,443	1,482	110		2
International	18,236	2,727	128		5
Freight	43	18	-		0

Figure 1 shows a summary of HS1 Limited performance in 2011/12. The proportion of trains delayed by HS1 Limited-attributable incidents was measured at the end of the year as 0.52%, substantially better than the performance floor minimum.

Figure 2 - Delayed trains broken down by causes for which HS1 Limited are wholly or mainly responsible

Category	Incident Description	Number of Trains Delayed
101	Points failures	4
102	Problems with trackside signs including TSR boards	1
104B	Track Faults including Broken Rails	49
106	Other infrastructure	13
107A	Possession over-run and related faults	38
201	OLE/Third Rail faults	136
301B	Track Circuit Failures	38
302A	Signalling System & Power Supply Failures	14
501A	Network Rail Operations - signalling	49
501B	Network Rail Operations - control	1
501D	Network Rail Operations - other	5
502A	Timetable Planning	15
Total		363

Figure 2 shows the number of trains delayed by an incident wholly or mainly attributed to HS1 Limited, displayed by cause. OLE faults led to the largest number of delayed trains in 2011/12.

Figure 3 - No of trains delayed wholly or partly due to HS1 Limited, by quarter 2010/11 to 2011/12

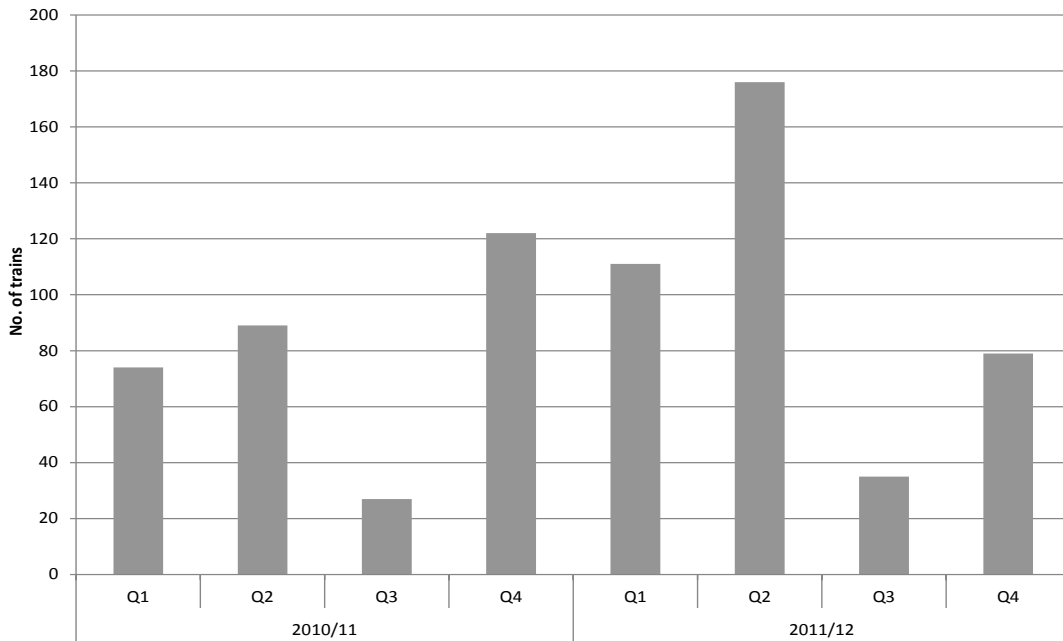


Figure 3 shows the number of trains delayed by HS1 Limited by quarter since the beginning of 2010/11. In 2011/12 Q3, a large number of trains were delayed due to an overhead line electrics failure on 2 September 2011. This aside, general performance on HS1 remains very good and we continue to monitor performance on a regular basis.

3. Track Access

Overview

All new framework track access agreements for HS1, and amendments to them, need our approval. These are contracts between HS1 Limited and train operators which allow access to HS1 and provide for the reservation of capacity for more than one timetable period.

Train operators can appeal to us in respect of the terms for track access and more generally under the Regulations.

Throughout the year we have continued to deal in a timely manner with all access applications whilst working with HS1 Limited to ensure that appropriate policies and associated documentation is in place. Against this background, HS1 Limited continues to progress access arrangements to encourage utilisation of the network by both passenger operators (national and international) and freight operators.

On a wider scale, we use our input to the Intergovernmental Commission (“IGC”) to ensure it delivers regulation of the Channel Tunnel as consistently as possible with our regulatory approach for HS1 Limited and the rest of the GB network. We are progressing work to examine Eurotunnel’s corporate structure and accounting separation to ensure there is long term improvement for a more open and competitive market. We see this as being instrumental for train operators being able to plan international paths.

Passenger Access Documentation

Revisions to the Passenger Access Terms, which are the terms and conditions under which passenger operators can use HS1, have now been finalised and we see this as a positive step prior to the introduction of any additional passenger traffic on HS1.

In our final conclusions document on the HS1 Criteria and Procedures for the approval of framework agreements, we addressed the issue of how access rights should be described in new contracts. We said that we would expect the contractual description to be closer to our model contract for the GB network. We are pleased to have agreed a revised Schedule 5 of the passenger framework track access agreement, (which sets out the expression of access rights for passenger operators), with HS1 Limited which is to be used in future framework track access agreements. We will update our Criteria and Procedures document as necessary, in consultation with HS1 Limited and other industry stakeholders.

Freight Access Documentation

After producing the model freight framework track access agreement which provides access rights for freight operators, HS1 Limited re-opened the freight access terms to make consequential amendments. The freight access terms are the terms and conditions under which freight operators can use HS1. HS1 Limited consulted on these documents which will be made available for use by freight operators seeking access on HS1.

Discounts

In February 2012, HS1 Limited published its general policy setting out the circumstances in which discounts on the charges that operators have to pay to access the infrastructure, can be offered. Under the charging framework, HS1 Limited has the ability to offer discounts, but these must be transparent and non-discriminatory, and fulfil certain criteria. HS1 Limited's policy sets out the principles underpinning the granting of discounts, the specific tests it will apply in determining whether the criteria in the charging framework are reached and the process to be followed for operators seeking discounts. The policy reflects substantial discussion between ORR and HS1 Limited, as well as an industry consultation process. ORR considers that the policy is consistent with the charging framework. Any agreed discounts will be reflected in framework track access agreements which have to be approved by us.

Network Statement

HS1 Limited has updated its Network Statement which was developed under the requirements of the Regulations and provides general information about HS1, including conditions of access to HS1 by operators and rules, procedures and criteria for allocation of capacity and access charges. The updates reflect changes to the Passenger and Freight Access Terms and the introduction of a discounts policy.

HS1 Network Code

The HS1 Network Code sets out the rules and procedures governing amongst other things, changes to the timetable (Part D), and changes to access rights (Part J) and is based on the Network Code for the national network. Given recent changes to Parts D and J of the national Network Code, the HS1 Network Code will be updated and amended to reflect these. HS1 Limited is to consult on changes to Part D of the Network Code during July 2012.

4. Periodic Review

Overview

A charging framework has been established for HS1 through the Concession Agreement pursuant to regulation 12(4) of the Regulations. The framework provides that track access charges may include an investment recovery charge to recover the capital costs of the HS1 project, charges relating to the operation, maintenance and renewal of HS1 and discounts in accordance with the Regulations.

Periodic Review

One of the key ways in which we perform our duty under regulation 13 is by conducting periodic reviews in the manner set out in the concession to ensure that HS1 Limited is provided with incentives to reduce the cost of provision of infrastructure and level of access charges consistent with delivering performance agreed with operators and subject to satisfying HS1 Limited's asset management obligations.

HS1 Limited's operation, maintenance and renewal charges are subject to periodic reviews every five years. HS1 Limited is currently in CP1 and its CP2 will commence on 1 April 2015. PR14 will be the first periodic review for HS1 Limited and will cover the review of HS1 Limited's operation, maintenance and renewal charges. This will establish an efficient level of charges, provide clarity to HS1 Limited and operators and will provide incentives on HS1 Limited to improve efficiency.

We have already engaged with HS1 Limited and the industry to discuss the scope of the review and timescales. We believe that input from the industry is important to assist in identifying issues and key workstreams for PR14 and we encourage such collaborative working. We expect to hold regular industry workshops and expect to publish a consultation document on our proposed process for PR14 at the end of 2012.

It has been agreed that the work to be carried forward in 2012 will include industry benchmarking, a review of performance and possessions regimes, a review of freight avoidable costs, development of HS1 Limited's asset management strategy and consideration of the structure of charges relating to the operation, maintenance and renewal of HS1. Separate working groups will be set up to consider these issues in further detail and we expect the resulting work to inform our initial consultation document in December 2012.

HS1 Limited has recently entered into a revised agreement with Network Rail (High Speed) covering the operation, maintenance and renewal of HS1. This revised arrangement is expected to deliver benefits for the Periodic Review process, including greater transparency, better information provision, and cooperation to deliver improved analysis. It has also benefited operators through an immediate discount and guarantees shares of any future outperformance.

5. Asset Management

Overview

The concession agreement requires HS1 Limited to secure the operation, maintenance, renewal, replacement and planning and carrying out of upgrades in accordance with best practice and in a timely, efficient and economical manner, to the greatest extent reasonably practicable having regard to all the circumstances.

Asset planning

HS1 Limited has updated its Asset Management Annual Statement in readiness for 2012/13 under section 6.1.1 of the Concession Agreement.

The asset specific policies which were an important milestone were produced on time and delivered in October 2011. At present Lloyds Register is reviewing the asset specific policies on our behalf and we expect this work to be completed shortly. As part of its review, Lloyds Register has not uncovered any serious issues in relation to the asset policies. HS1 Limited has also produced an asset management “roadmap” which sets out a series of tasks in the lead up to CP2. Two key deliverables will be the 2013 asset specific policies and the 40 year renewal plan. Both of these documents are due to be produced in October 2013.

HS1 Limited has commissioned a gap analysis of its asset management processes against BSI PAS55:2008 Asset Management Standard. This standard sets out a good practice framework to manage asset lifecycle risks through integrated planning and management control by instilling the well-known “plan-do-review quality” principles. HS1 Limited intends to determine how far away from best practice it is and what changes would be required to achieve this and then consider whether to attain formal accreditation.

HS1 Limited is working closely with the Olympic Delivery Authority to maintain a high level of reliability and play its part in the successful delivery of the 2012 Olympic Games. HS1 Limited has carried out a full risk assessment, with the main games presenting the greatest risk due to operation of the Javelin service from 0700-0200 over a period of 17 days. Maintenance schedules will resume at standard times for the Paralympic Games. A number of infrastructure initiatives have been undertaken by HS1 Limited in order to improve resilience including points roller installation, upgrade to the signalling systems, finalising maintenance plans and location of spares at strategic sites. There is also significant planning for operational resilience by providing greater resources across the network including station management and rapid-response teams.

The present signaller to driver communication system – Cab Secure Radio (CSR) – will be replaced by late 2012. Introduction of a GSM-R system by the end of CP1 will provide a single train to signalling communications system once funding arrangements are agreed.

Asset Condition

Robust condition measures are still being developed by HS1 Limited in terms of a simple grading system which we would expect to be in place by the end of 2012. In the meantime, we have examined the numbers of faults as a proxy to condition for this report given that the assets are relatively new.

Signalling assets make a significant contribution to the availability and reliability targets and therefore managing the system reliability is key to reducing the delays per train measure. The fault levels for signalling and control assets are generally well below target with no actionable faults reported in the last 4 months of 2011/12.

Actionable track faults have also decreased to one or two over the latter half of the reporting period. Mechanical and electrical assets performed well over 2011/12 with faults reported as being well below target. There is a similar story for the overhead catenary system faults with only one fault reported in the last 7 months.

For civils assets², the fault levels are well below target with the current cycle of detailed and visual examinations ongoing as well as the rolling programme of minor works. HS1 Limited is investigating alternative examination technologies for tunnels and has met with SNCF to share best practice. Drainage maintenance and CCTV surveys have focused on London and Thames tunnels during 2011. Earthworks examinations of sections 1 and 2 of HS1 were completed in 2011 which found no 'poor' grade areas. Apart from this, some remedial work has been reported to address short term defects on acoustic barriers in order to reduce noise for local residents.

There are two other infrastructure issues to note. The poor quality of the ballast in Eythorne and Boxley Tunnels is causing concern and both tunnels will be proposed for re-ballasting in CP2. There has been some concrete spalling from the soffit of Thurrock Viaduct and the structure is subject to special inspection frequencies.

Renewals

Progress against the 5 year delivery plan for all asset groups has been good with no backlog reported.

HS1 Limited reported that for 2011/12 signalling and control assets have performed well with a reduction in the amount of faults and attributable delay minutes compared to the previous year. The work undertaken to improve performance of signalling systems has been successful in reducing electromagnetic interference at St Pancras International.

The performance of electrification has been satisfactory, although there have been some problems noted with glass insulators for overhead line equipment as a result of vandalism. There has been an initiative to counter this risk by replacing the glass insulators in "hot spot" areas with vandal resistant polymeric types.

The introduction of the class 395 rolling stock operated by LSER in December 2009 had introduced some specific track degradation problems related to ride quality and lateral movement and vibration in the tunnel sections. HS1 Limited has improved the quality of the track through improved track geometry and rail profile. A higher frequency of wheel turning on the class 395 rolling stock has also helped to improve the ride quality.

There are no significant issues that HS1 Limited has reported relating to civils assets. The current asset policies are designed to ensure safety, reliability and availability are maintained. We expect HS1 Limited to

² Physical assets such as under- and overbridges, embankments, cuttings, retaining walls and tunnels.

continue to monitor and inspect the structures in accordance with the required standards and develop a good understanding of current condition in order to predict any likely future problems.

6. Safety

Overview

Under the Railways and Other Guided Transport Systems (Safety) Regulations 2006, the infrastructure manager, Network Rail (High Speed), has duties to establish and maintain a safety management system as set out in the Regulations. Network Rail (High Speed) was issued with a safety authorisation in accordance with the Regulations in October 2009 and this was renewed in March 2012.

Safety Activities during 2011-12

We have carried out inspections of elements of the safety management system that Network Rail (High Speed) has in place. These include the risk management process and safety culture within the company. We have utilised the Railway Management Maturity Model (RM3) as the model for our inspection work and Network Rail (High Speed) has come out with a good score on the elements inspected.

We investigated the emergency door opening arrangements on class 373 Eurostar trains following the death of a passenger who fell from a moving train in the Westenhanger area after he had opened the door. We are satisfied that the arrangements met the relevant standards.

We continue to monitor the safety performance of Network Rail (High Speed) through safety performance reports and routine liaison meetings.

We have monitored the preparations being made for the Olympic and Paralympic Games in terms of the crowd management, infrastructure maintenance arrangements and communications that are being put in place. We are satisfied with these arrangements.

We have continued to monitor the activities of the existing train operating companies on HS1 and have had discussions with potential new operating companies about operator certification requirements and safety authorisation for new rolling stock.

The Channel Tunnel IGC is currently considering the safety authorisation necessary for new rolling-stock (and therefore new international operators) to operate across HS1.

Proposed safety activities for 2012-13

We will continue with further inspections against the RM3 criteria and the arrangements for the Olympic and Paralympic Games. We will also be carrying out safety inspections of contractors working on HS1.

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