



OFFICE OF RAIL REGULATION

HS1 Review 2010-2011

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- Access by train operators to the infrastructure to operate trains
- Periodic review of the operation, maintenance and renewal costs
- Monitoring and taking action to enforce HS1 Ltd's performance and asset stewardship obligations.

While HS1 Limited is responsible for the overall management and operation of HS1, the responsibility for the infrastructure itself is subcontracted to Network Rail (Channel Tunnel Rail Link) Limited ("Network Rail (CTRL) Limited").

This report sets out how we think HS1 Limited has performed during 2010-2011 and what we have done during this period. We also outline the work we expect to do in 2011-12.

Background

The concession was sold to Borealis Infrastructure and the Ontario Teachers Pension Plan in November 2010. We think that HS1 Limited has performed well during the year, both before and after the sale of the concession, and both in terms of current performance and longer term asset management.

Performance and data monitoring

ORR is pleased with HS1 Limited's progress on data assurance. We monitor operational performance regularly, and HS1 Limited's performance during 2010/11 has consistently been high, much better than performance floor thresholds. Though services were affected by the severe weather during winter, HS1 Limited was able to maintain an effective service for both Eurostar International Limited ("Eurostar") and London and Southeastern Railway

Overview

High Speed 1 Ltd has a thirty year concession from the Secretary of State to operate and manage the high speed line between London St Pancras and the Channel Tunnel.

ORR is the health and safety regulator for High Speed 1, and also has economic regulation responsibilities through the concession agreement and the Railways Infrastructure (Access & Management) Regulations 2005 ("the Regulations"), covering:-

Company Limited (“LSER”) and still meet its performance threshold targets throughout the year.

Track access

There has been good progress this year in establishing the contractual documentation to underpin access to HS1. As a result of this, HS1 Limited has been able to start discussions with new operators, including freight operators, wanting to use HS1. We think that this will help the expansion of international railfreight and will encourage competition between passenger services on HS1 in the future.

Periodic Review

HS1 Limited is currently in control period 1 (CP1) and its CP2 will start from 1 April 2015. At present we are working on two workstreams in advance of the periodic review which are described in further detail below.

Track Access Charges - Freight Avoidable Costs Review

HS1 is now undertaking a review of its freight avoidable costs, which will cover the remainder of its control period 1. This work is needed because we did not examine HS1’s estimates of these costs in detail when we looked at other charges at the start of CP1. The review began in January 2011 and will finish in July 2011, with HS1 making final proposals to us for consideration by 29 July 2011. As a result, ORR is not yet in a position to be able to provide any substantive comments.

Industry Benchmarking

Between September 2010 and January 2011, HS1 Limited issued a benchmarking philosophy document and a benchmarking plan covering top down and bottom up benchmarking activities, at an

international level, over the period covered by the periodic review. The benchmarking activities consist of a qualitative (narrative) part and of quantitative analysis based on statistical comparisons of costs and outputs. HS1 Limited is now carrying out the first part of its benchmarking analysis, concentrating on qualitative activities. ORR expects HS1 to accelerate this work in 2011-12. Pending that, ORR is not yet in a position to evaluate HS1’s top down level of cost efficiency versus international best practice.

Asset management

HS1 is on target with its asset management programme, having completed its re-organisation and competency review. A criticality analysis was also completed last year. A key milestone will be the completion of the Asset Specific Policies due in Oct 2011. The introduction of the class 395 South-Eastern service has presented some technical challenges, but HS1 has continued to deliver a high level of performance and reliability. Planning and preparation for the Olympic Games is well under way. HS1 will need to monitor the impact on the infrastructure of current and any new services (e.g. freight services) and reflect any changes in the new asset specific policies.

Safety

There have been no significant safety issues reported and we have no significant concerns following our inspection of safety arrangements on HS1. The reports we receive from Network Rail (CTRL) Limited and the liaison meetings provide us with sufficient information to be able to monitor effectively.

Performance and Data Monitoring



Overview

ORR is pleased with HS1's progress on data assurance. Monitoring of operational performance is conducted regularly, and HS1's performance during 2010/11 has consistently been good, with only 0.43% of services being delayed by HS1-attributable incidents.

Data assurance

We monitor HS1's data to track performance against HS1'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's data. Arup reviewed the processes and systems used by HS1 and Network Rail CTRL Limited, for key performance and asset management measures.

The 2010 review concluded that reasonable levels of reliability and data accuracy are being achieved. Arup pointed out that processes and systems are still in early stages of development, and made a number of recommendations to HS1.

ORR has been pleased with progress against the data assurance recommendations. This includes the automation of data extraction, documented clarification of performance measurement, and data production and review guidelines.

In May 2011 Arup started their second review of HS1's data. Arup will independently review progress against their 2010 recommendations, and confirm the current reliability and accuracy of data, compared to last year's assessment. Arup are also reviewing the completeness and fitness for purpose of HS1's Asset Register.

The 2010 data assurance review is available on ORR's website¹, where the 2011 review will also be published in August 2011.

Monitoring

Monitoring of train performance is achieved through quarterly and annual data returns that set out HS1 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. performance of the line is expected to be at a much higher level than the performance floor measures, which state that the proportion of services delayed by HS1 in a quarter should not exceed 15%. ORR raises any performance issues with HS1 well before it has fallen to these levels. The first full year of data collection ended at the end of March 2011; a summary is provided here:

¹ <http://www.rail-reg.gov.uk/server/show/nav.2510>

Performance and Data Monitoring

Figure 1 – Route and HS1 performance figures for 2010/11; source: HS1

	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	71,287	7,792	306	0.43%	3
Domestic (St Pancras ↔ NKL via Ebbsfleet)	27,687	1,994	97		1
Domestic (St Pancras ↔ Ashford)	25,208	1,936	85		1
International	18,392	3,862	124		1
Freight	-	-	-		-

Figure 1 shows a summary of the end of 2010/11 HS1 performance. The proportion of trains delayed by HS1-attributable incidents was measured at the end of the year as 0.43%.

Figure 2 Incident cause attribution – HS1 wholly or mainly categories; source: HS1

Incident Description	Number of Trains Delayed
Points failures	10
TSRs Due to Condition of Track	2
Other infrastructure	25
Possession over-run and related faults	4
Other possession related delay	1
Vegetation Management Failure	20
OLE/Third Rail faults	8
Signal Failures	49
Track Circuit Failures	87
Signalling System & Power Supply Failures	16
Other Signal Equipment Failures	11
Network Rail Operations - signalling	48
Network Rail Operations - control	1
Network Rail Operations - other	17
Timetable Planning	5
Network Rail commercial takeback/other	2
Total	306

Performance and Data Monitoring

Figure 2 shows the number of trains delayed by an incident wholly or mainly attributable to HS1, broken down by the delay categories for which HS1 are responsible. Track circuit failures accounted for the largest proportion (28%) of HS1 delays, with Operations – signalling and signal failures the next largest.

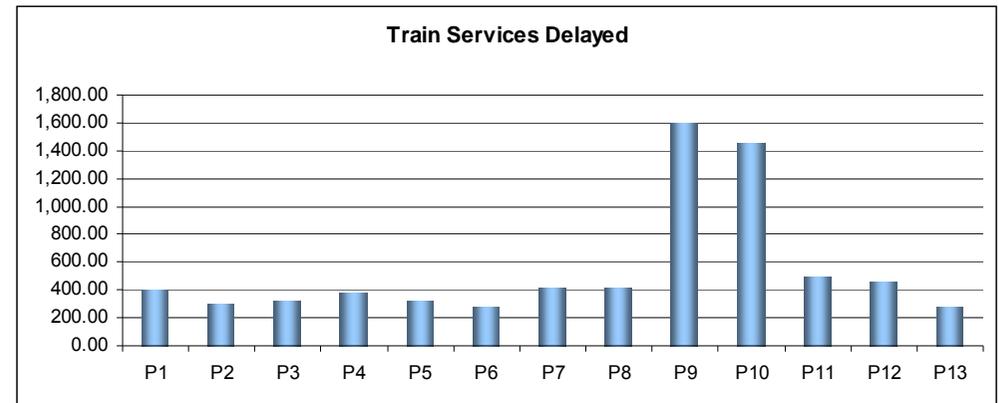
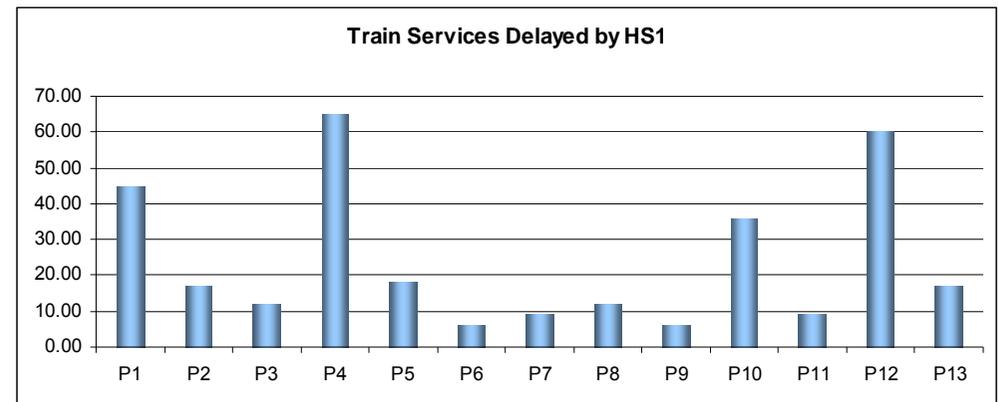
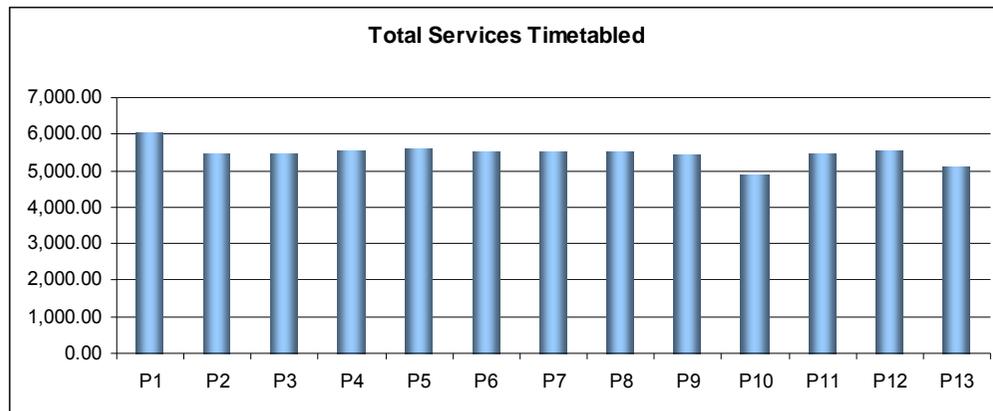
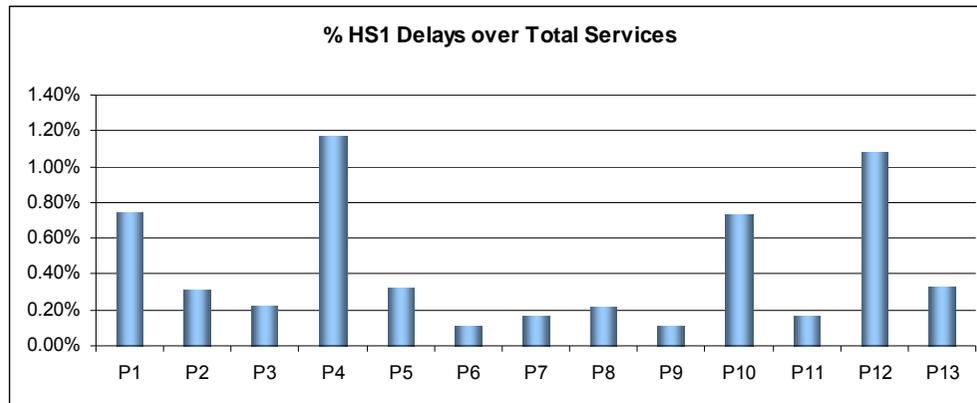


Figure 3 – Periodic performance of route and HS1 services 2010/11; source: HS1





Despite the heavy snow in late November and December, HS1 was available for both Eurostar and London and South Eastern Railway Company Limited (“LSER”) services throughout the period. Though the severe weather led to a spike in delayed trains in P9 and P10 (figure 3), HS1 was still able to achieve good performance during that time. Disruption to train services was experienced and an independent review of St Pancras station operations was commissioned to ensure lessons are learnt to improve customer experience during future weather disruption.

During the exceptional weather, HS1 was recognised by customers as providing a robust service, and NR (CTRL) has consistently been the best performing area nationally.

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.

We have seen increasing interest from operators who would like access to HS1. In October 2010, Deutsche Bahn brought its ICE train to St Pancras to demonstrate its intention to run a service using HS1. Deutsche Bahn is now in detailed discussions with HS1 Limited with a view to introducing a service between London and Germany by 2013.

On a broader front, through our involvement in the intergovernmental commission for the channel tunnel, and our co-operation with other independent regulatory bodies in Europe, we are working to make it easier for both freight and passenger train operators to plan and specify international paths.

HS1 Criteria & Procedures

We published our criteria and procedures for the approval of track access agreements on HS1 in October 2010.

The document sets out the criteria and procedures we expect to follow in processing applications for framework agreements on HS1. It supports our aim of having clear and transparent processes for applicants to follow, which make it easier for us to consider and decide access applications quickly and effectively.

Passenger Access Terms

The proposed changes to the Passenger Access Terms have still to be finalised. We understand that this is because HS1 is still waiting for LSER and DfT to provide substantive comments on a number of outstanding issues. Completion of this work is an important precursor of the introduction of additional passenger traffic on the network.

Freight Access Terms

The Freight Access Terms have been finalised and we have confirmed that we are content with them.

Following ORR approval of the form of Freight Access Terms, HS1 Limited will make a number of consequent changes to the Passenger Access Terms.

Once the HS1 Passenger Access Terms and Freight Access Terms have been published, we will update our Criteria and Procedures document, as necessary, in consultation with HS1 Limited.

Framework Track Access Agreements

Schedule 5

In our final conclusions document on the HS1 Criteria and Procedures, 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 than the Eurostar and LSER contracts already in place. This followed our letter of 30 October 2009, in which we said that in future we would expect access rights in Schedule 5 to be based on our

model contract, and any variations from it would need to be justified. We discussed this further with HS1 Limited in early April and HS1 Limited is to draft a revised Schedule 5 for our approval.

Freight framework track access agreement

We supplied our initial comments in relation to the freight framework track access agreement and suggested a number of amendments. HS1 Limited is considering our comments and is to revert to us with a further version for our approval.

The model freight framework access agreement will be finalised shortly with a view to being used by freight operators who want to use HS1.

Eurostar International Limited 1st Supplemental Agreement

HS1 submitted an application for approval of the Eurostar 1st Supplemental Agreement which contained provisions for a discount for some services. No consultation was carried out in relation to the 1st Supplemental Agreement and no consultation has yet been carried out in relation to HS1 Limited's general policy on access charging discounts. Our view was that consultation on the proposed discount would provide an important opportunity for any operator who considered that they should be offered a similar discount, to explain this. We expected HS1 Limited to have carried out consultation in relation to this Supplemental Agreement, given the absence of a general discount policy.

We approved the Eurostar 1st Supplemental Agreement on the basis that HS1 Limited must accept the risks associated with not having a clear and transparent discount policy in place. HS1 Limited has acknowledged that our decision on this discount arrangement sets a

precedent for the basis on which HS1 Limited is prepared to offer discounts going forward.

Discounts

Under the charging framework, HS1 Limited has the ability to offer discounts, but these must be transparent and non discriminatory. HS1 Limited drafted a consultation document on its general policy for access charging discounts and approached us for initial comments. We advised that we were comfortable with HS1 Limited's general approach but made a number of specific suggestions and recommendations relating to the accessibility of the document and its structure. HS1 has accepted these comments and will consult on its general policy for access charging discounts during summer 2011. Once that process is complete, we understand that we are likely to receive further applications for provisional approval of Supplemental Agreements concerning access charge discounts.

Funder Direct Agreements

The Funder Direct Agreement ("FDA") is made between HS1 Limited, the HS1 Limited security trustee, the relevant operator and the Secretary of State. Under the agreement, the Secretary of State agrees not to terminate the HS1 Concession Agreement on grounds of an event of default caused by HS1 Limited without first giving the HS1 Limited security trustee an opportunity to 'step in' and use reasonable endeavours to remedy the breach of the Concession Agreement.

HS1 Limited presented us with a form of FDA with Eurostar for consideration and this FDA is now in final form. We commented that there were a number of provisions in the FDA which effectively amended the provisions in the framework track access agreement with

Eurostar. We explained that we had no objections in principle to the content of the agreement but that we would need to approve the FDA to the extent that it amends Eurostar's framework track access agreement. Accordingly, we have now issued our formal approval of the FDA.

Network Statement

The HS1 Network Statement has been developed under the requirements of the Regulations and provides general information about HS1, conditions of access to HS1 by operators and rules, procedures and criteria for allocation of capacity and access charges. As a result of changes to the Passenger Access Terms and Freight Access Terms, the HS1 Network Statement will be updated and amended. HS1 Limited will undertake the relevant consultation exercise during 2011.

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. These changes include redrafting Part D to make it clearer, easier to understand and to ensure it accords with current industry procedure and revising Part J to address issues highlighted in Part J appeals and considering whether the timings of Part J processes and dispute resolution can be shortened. HS1 Limited will undertake the relevant consultation exercise during 2011.

When the HS1 concession was sold, we had identified that the existing dispute resolution process was not appropriate for access-related issues. Accordingly, HS1 has developed a new approach, in consultation with potential and existing users of the network and we have now approved new access dispute rules. These are designed to ensure fair and efficient determination of access-related disputes.

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.

One of the key ways in which we perform our duty under regulation 13 to ensure that HS1 Limited is provided with incentives to reduce the cost of provision of infrastructure and level of access charges is by conducting periodic reviews in the manner set out in the concession. We undertake a periodic review of such charges and ensure that HS1 Limited is provided with incentives to reduce the cost of provision of infrastructure and the level of access charges.

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. Although HS1 Limited's structure of charges follows similar principles to Network Rail's structure of charges, there are important differences between the two. For example, HS1 Limited charges include capacity reservation charges which are not currently part of the charging structure on the national network

Industry Benchmarking

Between September 2010 and January 2011, HS1 Limited issued a benchmarking philosophy document and a benchmarking plan covering top down and bottom up benchmarking activities, at an international level, over the period covered by the periodic review. The

benchmarking activities consist of a qualitative (narrative) part and of quantitative analysis based on statistical comparisons of costs and outputs. HS1 Limited is now carrying out the first part of its benchmarking analysis, concentrating on qualitative benchmarking with elements of bottom up analysis. The comparator countries being analysed by HS1 Limited, as agreed with us, are Western European jurisdictions where high speed rail is significant such as France, Spain and Italy. Comparisons will also be attempted with countries such as Belgium and the Netherlands where individual high speed lines are almost self-contained.

ORR and HS1 Limited have steering group meetings every two months to discuss results, progress and next steps. HS1 Limited is planning to present the first results of its qualitative analysis to ORR at the next benchmarking steering group meeting.

HS1 Limited will be undertaking quantitative analysis, collecting data on costs and outputs and analysing these using regression techniques. An international sample has been identified for the quantitative analysis and preliminary results are expected by the end of 2011. This work will be a key input to our first periodic review of HS1.

Access Charges - Freight Avoidable Costs Review

HS1 Limited is currently undertaking a review of their freight avoidable costs, which would cover the remainder of its control period 1 (CP1). Freight avoidable costs are those which would be avoided if there was no freight traffic (freight lines and facilities).

It was agreed with HS1 Limited in 2009 that they would carry out a review of their freight avoidable costs. This was confirmed in our

regulatory statement for HS1 Limited that was published on 30 October 2009. The regulatory statement stated (paragraph 25) that:

“However, as part of our review of the level of access charges we did not examine in detail HS1 Limited’s estimates of the freight avoidable costs that underpin the charges that will be incurred by freight. We understand that HS1 Limited is working with freight operators to establish freight operations on High Speed 1. Until there is more clarity on the extent of freight services that will operate on High Speed 1 there will remain uncertainty around the costs of freight, in particular the avoidable costs of freight and the impact of these on freight access charges. We recognise the significant discount that HS1 Limited has offered to freight operators for the first control period and consider this would be likely to offset any inefficiencies in the level of the freight avoidable costs. However, we have agreed with HS1 Limited that the company will review the level of freight avoidable costs during the next twelve months and, if appropriate, review the level of freight access charges”.

HS1 Limited began its review in January 2011 and will be making final proposals to us for consideration by 29 July 2011.

Once we receive the final proposals, we will endeavour to make a decision within two months. To allow us to do so, we have stated that the work undertaken by HS1 Limited during this review is robust and transparent. In particular:

1. Data: all the appropriate freight costs are considered in the review and are presented clearly in a transparent manner.

2. Methodology: the methodology applied to conduct the review and reach the conclusions is robust, transparent and in accordance with the legislation.

3. There is evidence-based justification for the conclusions reached.

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 reasonable practicable having regard to all the circumstances.

Asset planning

HS1 Limited provided a draft copy of the Annual Asset Management Statement for 2011/12 as required under section 6.1.1 of the Concession Agreement. This document sets out how HS1 has performed over the previous six months as well as providing details of planned activities for the coming year. HS1 is continuing to provide a high level of reliability of service following the launch of the South-Eastern franchise despite some technical challenges due to the class 395 wheel-interface.

Planning and preparation for the Olympic Games is well under way with HS1 being a key transport link between Stratford to Ebbsfleet and St Pancras stations. HS1 Limited will need to ensure there is a high level of reliability with a timetabled peak of 12 trains per hour.

The asset management programme of work is on schedule with the re-organisation and competency review having been completed in June 2010. A criticality analysis of the assets was also completed in October 2010.

The next major milestone for HS1 Limited will be the development of its draft asset specific policies which are due in October this year. This will provide HS1 Limited with a more robust assessment of degradation rates for its assets and

hence enable a more accurate calculation of future renewals expenditure. The asset specific policies will be further refined to include whole-life cost justification and scenario analysis by October 2013.

Asset information

Network Rail (CTRL) Limited manages the asset information on behalf of HS1 Limited. HS1 Limited has now completed a review of its asset information requirements and will put in place asset information systems that can better handle future demands for planning and works management. The decision to in-source maintenance functions together with the introduction of the IRIS 320 measurement train presents HS1 Limited with an opportunity to better integrate works delivery and tracking systems with planning and asset management systems.

In July 2010 HS1 Limited developed its asset information strategy which supports the Asset Management Strategy, the Asset Specific Policies and Asset Management plans. Once the work on the Asset Specific Policies (ASP) is completed later this year HS1 Limited will further develop its Asset Information Systems to record information in line with its requirements.

In 2010 Arup were appointed to provide the ORR with assurance of HS1 Limited's performance and asset management data. Arup have recently started their second review, which will focus on HS1 Limited's asset register. The review includes assurance of processes and systems, along with linkages to the maintenance system and quality and accuracy of data held within the register. The report will be published on ORR's website in August 2011.

Asset delivery

Renewals

Given that the line was only recently opened in November 2007, the infrastructure is in good condition and the focus of delivery activities is mainly on maintenance activities until the asset-specific policies work is completed.

A part of the OMR costs that are paid by the TOCs to HS1 as track access charges is designed to fund future renewals. The funds are collected and paid into a separate ring-fenced escrow account each quarter. Any drawdowns from this account from this account have to be approved by the Secretary of State and can only be used to fund renewals expenditure approved by the ORR.

Once the degradation rates have been revised to take into account changed traffic patterns then HS1 Limited will be in a better position to predict renewals requirements and hence future funding provisions through the escrow account.

The ORR will review HS1 Limited's ASPs and degradation assumptions in order to satisfy ourselves that they are robust and sustainable in order to continue to deliver the required levels of performance through CP1 and beyond.

Asset condition

HS1 Limited is in the process of developing the requirements for condition information of its assets. This will be informed primarily as part of the work on the ASPs. Track condition for example is currently monitored through a track recording vehicle and an ultrasonic train unit. Network Rail (CTRL) Limited's New Measurement Train will also

be used to provide additional information. Short term condition measures such as fault levels, track quality, broken rails, service-affecting defective rails are regularly captured and monitored.

Going forward condition-related metrics will need to be developed which will underpin the longer term renewals plans. Network Rail (CTRL) Limited uses its current systems to identify and prioritise programmes of work on behalf of HS1.

Overview

Under the Railways and Other Guided Transport Systems (Safety) Regulations 2006, the infrastructure manager Network Rail (CTRL) Limited, has duties to establish and maintain a safety management system as set out in the Regulations. Network Rail (CTRL) Limited was issued with a safety authorisation in accordance with the regulations in October 2009. This authorisation is due for renewal in April 2012 and we anticipate an application for renewal later this year.

Safety Activities during 2010-11

During the past year we have monitored safety performance through routine liaison meetings and through safety performance reports received from Network Rail (CTRL) Limited.

We have attended, as an observer, selected meetings of the Network Rail (CTRL) Limited System Review Panel where HS1 Limited are also represented. This panel gives an independent oversight to projects involving change to the infrastructure or operating procedures.

We have carried out inspections of the arrangements for management of track inspection and maintenance, switch and crossing maintenance and structures and earthworks inspection and maintenance. No significant issues were identified as a result of our monitoring and inspections.

We have also monitored and inspected the activities of the train operators using the network and have not identified any major safety issues with their activities.

2010 RAIB Report

In 2010, RAIB published its report into the failure of the 25Kv overhead line system above one of the platforms in St Pancras International Station which occurred in 2009. We have reviewed the recommendations in the report and are considering whether appropriate action has been taken in response to them.

Proposed safety activities for 2011-12

For the coming year we will continue with planned inspections and will be expecting the application for renewal of the safety authorisation later in the year. We do not anticipate any particular problems with the latter during our assessment process. We are also monitoring HS1 Limited's planning of safety arrangements for the Olympic Games, in particular, aspects such as the arrangements for crowd control and procedures for response to incidents.



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