

**REPORT BY THE CHANNEL TUNNEL  
INTERGOVERNMENTAL COMMISSION ON  
SAFETY IN THE CHANNEL TUNNEL FIXED  
LINK DURING 2018**

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## **A - Scope of the report**

1. This report contains information relating to the activities of the Channel Tunnel Intergovernmental Commission (IGC) in its role as the safety authority for the Channel Fixed Link (the Channel Tunnel) within the terms of the European Railway Safety Directive (2004/49/EC). The IGC's responsibilities extend only to the area of the Fixed Link as described in the Treaty of Canterbury<sup>1</sup> between the United Kingdom and France and the Concession Agreement<sup>2</sup> between the two Governments and the Concessionaires in 1986. This report covers the period from 1 January to 31 December 2018.

2. As this report is also available in English, an optional English summary is not provided. A French version of the report has been prepared and submitted to the European Union Agency for Railways (the Agency) together with the English document, as it is the IGC's policy make all of its documents that are in the public domain available in both English and French. Readers of the French version who wish to consult the optional English summary are invited to refer to the full English version.

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<sup>1</sup> Available on the IGC website at [http://www.channeltunneligc.co.uk/spip.php?action=acceder\\_document&arg=93&cle=939ac28402cdf20e06d641b2ef2d1ece&file=pdf%2FTreaty\\_of\\_Canterbury\\_1986.pdf](http://www.channeltunneligc.co.uk/spip.php?action=acceder_document&arg=93&cle=939ac28402cdf20e06d641b2ef2d1ece&file=pdf%2FTreaty_of_Canterbury_1986.pdf)

<sup>2</sup> Available on the IGC website at [http://www.channeltunneligc.co.uk/spip.php?action=acceder\\_document&arg=94&cle=eb523418f351e57679238f0cf5452e8d&file=pdf%2FConcession\\_Agreement.pdf](http://www.channeltunneligc.co.uk/spip.php?action=acceder_document&arg=94&cle=eb523418f351e57679238f0cf5452e8d&file=pdf%2FConcession_Agreement.pdf)

## **B. Preliminary section**

3. **Introduction-** The directive on safety on the Community's railways (2004/49/EC, amended) contains a clause concerning a binational body entrusted by the Member States to ensure a unified safety regime for specialised cross-border infrastructures, said body performing the functions of a 'safety authority' (NSA). This clause has been implemented for the Fixed Link, France and the United Kingdom (UK) agreeing that the IGC would be the 'safety authority'. This report is prepared in accordance with Article 18 of the Directive and complies as far as possible with the model established and guidance issued by the Agency, which aims to provide a structure and table of common elements for this type of report. As required by the Directive, the report is submitted to the Agency.

4. **Information on railway infrastructure** – The Channel Tunnel railway infrastructure includes a rail link consisting of two drilled twin rail tunnels connecting Cheriton in Kent, England and Fréthun in the Pas-de-Calais, France, as well as the terminals located on each side. The terminals include: high-speed lines linking the tunnel to the UK and French national railway networks; rail loops and platforms for loading and unloading passenger and freight shuttles; depots, maintenance facilities and tracks linking these facilities to the rest of the infrastructure.

5. **Infrastructure manager** - A network map and information about Eurotunnel, the infrastructure manager of the Fixed Link, are given in **Annex A**.

6. **Railway undertakings** – The rail transport undertakings which have operated trains in the Channel Tunnel during the period covered by this report are: DB Cargo UK, Eurostar International Ltd and GB Railfreight Limited. The addresses and websites of these railway undertakings are provided in **Annex A.3**. The annual reports of the French and UK safety authorities provide further information about them.

7. **Summary** - In 2018, the major events were as follows:

- continuation of the dedicated working group's work to review and monitoring measures taken by Eurotunnel and ElecLink to manage the safe installation of a high-voltage electricity cable in the Tunnel, as required under the prior consent given by the IGC for this project on 7 February 2014. Consent was suspended by the IGC on 18 October 2017 and has not yet been reinstated. A number of outstanding issues remain to be resolved in order to reinstate the consent. In addition a Direction was issued to Eurotunnel on 12 July 2018, under Article 27.5 of the Concession Agreement, prohibiting the installation of the cable in the Channel Tunnel until the restoration of the IGC consent. The IGC is working closely with Eurotunnel to resolve these issues;
- ongoing monitoring by the Channel Tunnel Safety Authority (CTSA) of measures taken to comply with recommendations made in two reports in respect of the fire on an Arbel freight shuttle on 17 January 2015: the National Investigation Body (NIB) report published by the Bureau d'Enquêtes sur les Accidents de Transport Terrestre (BEA-TT) and the Rail Accident Investigation Branch (RAIB) on 5 May 2016; and the report commissioned by the IGC from Claude Gressier and Chris Gibb into the management of disruption in the Channel Tunnel;

- ongoing monitoring of Eurotunnel's response to the recommendation regarding 'Management of the risks associated with over-height objects' from the 2016 National Investigation Body (NIB) report into the 17 January 2015 Channel Tunnel fire. This recommendation suggested the reinstallation of pagodas previously removed from wagons or consideration of alternative mitigation measures to reduce risk of over height objects coming into contact with tunnel infrastructure. In 2018 Eurotunnel advised the IGC that it was intending to fit its full Arbel and WBN fleet with four pagodas per wagon by late 2020 or early 2021. The IGC has required that Eurotunnel must keep the existing risk mitigation measures in place until Eurotunnel has supplied firm evidence that the risks currently managed by these measures will continue to be mitigated to an acceptable level through the fitting of four pagodas on each wagon. This is the case and the IGC continues to monitor operations closely;
- authorisation of renewed five year Part B Safety Certificates for DB Cargo (on 14 March 2018) and GB Railfreight (1 August 2018);
- ongoing additional authorisations for the new Velaro e320 / Class 374 trainset to be used in the Channel Tunnel by Eurostar;
- the commencement of the analysis of Eurotunnel's safety management system (SMS) as part of the Infrastructure Manager's application for renewal of its five-year safety authorisation (due in 2019); and
- on 2 August 2018 the issue of two enforcement notices requiring Eurotunnel to provide safe systems of work that are for employees carrying out the Agent 5 role on its terminals. This was in response to an incident in 2017 when a platform agent (Agent 5) was injured by a moving lorry whilst carrying out safety checks on lorries prior to their boarding the freight wagons. These notices were issued by the UK Office of Rail and Road (ORR), in full agreement with the French delegation of the CTSA.

8. **Analysis of global trends** - the IGC and CTSA continued their monitoring of Eurotunnel's safety management system (SMS) as well as their monitoring of safety outcomes. Most of the common safety indicators reported in detail in **Annex C** remain at zero.

The value of Eurotunnel's internal Passenger Individual Safety indicator (which analyses events likely to affect a small number of people and monitors issues such as emergency braking due to slippage or automatic activation and stopping in the tunnel for more than 30 minutes), was 262 in December 2018, which is below the Eurotunnel target of 270. The comparable figure for 2017 was 225. The Passenger Collective Safety indicator (which analyses events likely to affect the safety of a large number of people through the involvement of a train in an incident endangering the train itself and covers issues such as near misses, SPADs (Signals Passed at Danger), loss of control of points, detection of locked brakes, emergency braking, stopping in tunnels, failure to comply with signals, fuel spills, crossover door incidents and Major failure of track equipment) was 80 in December 2018 (identical to the 2017 figure). This was above the target figure of 75.

## **C - Organisation**

9. The IGC was created by the Treaty of Canterbury, signed on 12 February 1986, to supervise, on behalf of the governments of the United Kingdom and the French Republic and by delegation thereof, all issues concerning the construction and operation of the Fixed Link. Among its duties, the IGC is responsible for drawing up any regulations applicable to the Fixed Link or contributing to this process.

10. The Treaty of Canterbury also established the CTSA to advise and assist the IGC on all matters relating to safety during the construction and operation of the Fixed Link. The functions of the CTSA are also to ensure that safety regulations and practices applicable to the Fixed Link comply with national or international regulations, to enforce such regulations and to monitor their implementation, to examine reports into any incidents affecting safety, to carry out investigations and to report to the IGC.

11. The UK and French Secretariats are responsible for preparing and implementing the decisions taken by the IGC and the CTSA.

12. A diagram showing the structure of the IGC and its links with other organisations is given in **Annex B**.

## D. Changes in railway safety

### D 1 - Initiatives to maintain or improve safety results

**Table D.1.1 - Safety measures triggered by accidents / precursors of accidents**

Accidents / precursors of accidents which triggered the measure			Determined safety measure
Date	Place	Event description	
6 April 2018	Eurotunnel Folkestone Terminal	An engineer surveyor was struck by a lighting unit, which free-fell 18 metres from the top of a lighting mast in the UK's Works Train Loading Area. Having completed his competent person thorough examination, the lighting unit was being winched back to the top of the mast when the winch rope broke and the lighting unit fell to the ground, striking him. He suffered a fractured skull and multiple fractures to his body.	<ul style="list-style-type: none"> <li>• Effective barriers provided around the lighting masts in areas of higher access with an order placed for more barriers to fence off the remaining masts;</li> <li>• a possession taken of the sidings to prevent risk to shuttles and drivers if a lighting array failed and temporary fencing provided as warning pending the improved fencing being delivered;</li> <li>• temporary lighting on order, which will be positioned and checked ready for when the old lighting masts are removed;</li> <li>• a sensible action plan in place to remove and replace the old masts ; and</li> <li>• all the masts of this type with a winch mechanism have now been removed and replaced with new lighting.</li> </ul>

**Table D.1.2 - Safety measures (or voluntary measures) triggered by factors other than accidents / precursors of accidents**

Description of the area of concern	Description of the trigger	Determined safety measure
N/A		

## D 2 - Detailed analysis of trends

13. Very few precursors (incidents that could have led to an accident) occurred in the Channel Tunnel. The IGC and the CTSA did not conduct a "detailed analysis of trends" compared to the CSIs (Common Safety Indicators) because in view of the small number this would not be a useful or proportionate method likely to provide significant information on safety performance. In 2018, there were eleven broken rails and five SPADs. Below, a summary of the CSI precursors that did occur allows a comparison with the incidents of the previous year:

	2017	2018
Total number of precursors	20	16
Total number of broken rails	15	11
Total number of track buckles	0	0
Total number of signalling failures	0	0
Total SPAD	5	5
Total number of broken wheels on rolling stock in service	0	0
Total number of broken axles on rolling stock in service	0	0

14. **Common Safety Indicators (CSI)** - Details on CSIs as defined in Directive 2009/149/EC (amending Directive 2004/49/EC with regard to CSIs and common methods to calculate the cost of accidents) are given in **Annex C**. It should be noted that the IGC and the CTSA receive a significant amount of richer and more useful information from Eurotunnel and the railway undertakings which helps them develop their approach to regulatory and supervisory activity. However, this information falls outside the scope of CSI reports.

## D 3 - Results of safety recommendations

15. On 5 May 2016 BEA-TT and RAIB published their joint NIB report into the fire on Eurotunnel (Arbel) freight shuttle 7340 which occurred on 17 January 2015.<sup>3</sup> This report contained six recommendations (all addressed to Eurotunnel) and six invitations (five for Eurotunnel and one for the IGC). In accordance with its legal obligations<sup>4</sup> the IGC, as NSA for the Channel Tunnel, provided its response to this report on 11 May 2017 outlining the measures taken or planned as a consequence of the recommendations made. It has also submitted to the investigation bodies further annual updates on progress on 8 June 2018 and 6 September 2019. To date, one recommendation and three invitations have been reported as closed.

<sup>3</sup> Available on the RAIB website at

[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/521184/160505\\_ReportET2016\\_eurotunnel\\_eng.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/521184/160505_ReportET2016_eurotunnel_eng.pdf).

<sup>4</sup> Pursuant to Article 752 of the Regulation of the Intergovernmental Commission on the use of the Channel Tunnel dated 24 January 2007, as amended by the IGC Regulation signed on 6 February 2013, published in France by Decree No. 2013-318 of 15 April 2013 and the United Kingdom by the Statutory Instrument 2013 No. 407: The Channel Tunnel (Safety) (Amendment) Order 2013).



16. The IGC has committed to monitor actions to respond to the outstanding recommendations and invitations and to report at least annually to BEA-TT and RAIB on progress. These monitoring activities have led to Eurotunnel's agreement to reinstate four pagodas to each Arbel and WBN wagon and to retain agreed alternative mitigation measures (e.g. catenary cut-out on platforms) whilst this work is being completed.

## **E - Important legislative, regulatory and administrative changes**

17. **Regulation on the safety of the Channel Tunnel Fixed Link** - No new regulations were published for the Channel Tunnel in 2018. A Derogation was granted for Eurotunnel on 22 March 2018 under regulation 14(2)(a) of the Railways (Interoperability) Regulations 2011 against all of the latest Control, Command and Signalling TSI published on 15 June 2016. This was in respect of the upgrade of the GSM-R radios for their Brush and Krupp locomotives on the grounds that the project was at an advanced stage when the TSI was published. On 12 October 2018 ORR granted Eurotunnel a first authorisation for the placing in service of GSM-R Cab Mobile into its Brush and Krupp locomotives to operate on the High Speed 1 network if they were to leave the Channel Tunnel concession area. The separate IGC authorisation enabling the same equipment to be used within the boundaries of the Fixed Link was issued to Eurotunnel on 20 February 2019.

18. **Other major regulatory matters processed by the IGC and CTSA** - Other important issues processed by the IGC and the CTSA during the year are as follows:

- **Cross-acceptance of rules for railway vehicles passing through the Tunnel** – Following the signing in 2013 of a formal agreement between ORR and EPSF regarding cross-acceptance of railway vehicles, the CTSA continued to work with EPSF and Eurotunnel to compare the requirements of the relevant national and Channel Tunnel network statements to assess whether the rules are equivalent and therefore do not need to be re-checked as part of the vehicle re-authorisation process. As a result a revised version of the '*Channel Tunnel Reference Document for cross-acceptance of rail vehicles*' was approved and published by the IGC on 9 January 2018.

Since then the CTSA has been engaged with the Agency to clarify whether some of these rules need to be retained or can be repealed.

- **TSI OPE Implementation Plan** – The IGC has continued its work to update and close outstanding issues on its OPE TSI Implementation plan, the original version of which was submitted to the agency on 1 October 2017. Following feedback in January 2018 that the Agency had no comments on the original plan an updated version was submitted on 20 November 2018. No feedback has been received from the agency as yet.
- **Discussions with railway undertakings and rolling stock manufacturers** - During the year, the IGC and the CTSA continued to hold discussions with railway undertakings and rolling stock manufacturers about the requirements they must meet to obtain technical authorisation to operate in the Tunnel. This included discussions with parties interested in producing trains and freight wagons for use through the tunnel including DB Germany/CRRC Shandong, Greenbrier and the London Sleeper Company.

- **Participation in the work of the Agency and its working groups** - The IGC and CTSA have continued to play a full part in the work of the Agency and its various working groups. Given their close relationship with the safety authorities of France and Great Britain, the IGC and CTSA rely on their close links with the safety authorities' experts (many of them are themselves members of or advisors to the CTSA). The IGC and CTSA only participate directly in working groups that are particularly relevant to the Channel Tunnel, for example, the One Stop Shop and the TSI for Safety in Railway Tunnels, but its representatives have attended all meetings of the Agency's network of national safety authorities and working groups dealing with national rules and cross-acceptance.

## **F - Changes in safety certificates and authorisations**

19. The directive on Community Railway Safety was transposed in respect of the Tunnel by the Binational Safety Regulation of 24 January 2007 which entered into force on 4 July 2008 via Statutory Instrument 2007-3531 in the UK and Decree 2008-748 in France. The revised Railway Safety Directive (2008/110/EC) and the new Interoperability Directive (2008/57/EC) were transposed for the Fixed Link in March 2013 via a modified binational regulation supplementing the regulation for national interoperability. The revised guide to the implementation of the regulations is available on the IGC website via the following URL:

<http://www.channeltunneligc.co.uk/-Regulations-and-guidance-.html?lang=en>

20. During 2018 the IGC authorised fourteen upgraded Velaro trainsets with ERTMS modification to allow the new service to Amsterdam. Direct connections between London and Amsterdam, operated by Eurostar, started in April 2018.

21. The IGC also issued renewed Part B Safety Certificates to DB Cargo and GB Railfreight.

## **G - Supervision of railway undertakings and infrastructure managers**

22. The 1986 Treaty of Canterbury assigned to the CTSA the responsibility to ensure that safety regulations and practices applicable to the Fixed Link comply with national and international laws, to enforce those laws, to monitor implementation and to report to the Intergovernmental Commission. The treaty also stipulates that, in order to ensure its remit, the CTSA may request the assistance of the administrations of each of the governments, as well as the assistance of any body or expert of its choice, and that both governments must give the CTSA and its members and agents the powers of investigation, inspection and prescription necessary to exercise its functions. The quadripartite Concession Agreement stipulates that the concessionaires must give access to any part of the Fixed Link to persons duly authorised by the IGC or with the approval thereof by the CTSA, so that these people, as part of their duties, may inspect the Fixed Link and investigate any matter relating to the construction or operation thereof. The concessionaires must provide these people with all means necessary to exercise their functions.

23. The broad mandate given to the CTSA by the Treaty of Canterbury means it is responsible for overseeing a number of matters outside the scope of safety authority safety tasks under the Safety Directive, in particular emergency and civil safety issues. This is reflected in its supervision strategy.

### 1.1 Audits / Inspections / Controls

24. The CTSA's annual inspection and audit programme is designed to take account of key information included in the safety management systems (SMS) of Eurotunnel and the railway undertakings authorised to use the Channel Tunnel.

25. The following monitoring methods were used in 2018:

- inspections of Eurotunnel and railway undertakings (a list of the subjects covered is given below);
- information flows - regular reports from Eurotunnel such as daily reports by the Operations Duty Manager (ODM); monthly summaries of incidents and safety performance, minutes of the Concession Safety Committee, Operating Performance reports, etc.;
- information obtained from incident and accident investigations;
- audit reports (internal and external);
- ad hoc meetings between Eurotunnel and CTSA experts;
- meetings with the railway undertakings; and
- Eurotunnel information about its interface with the railway undertakings and change management.

### 1.2 Points of note / sensitive issues to be monitored by the safety authority

26. Inspections during the year have resulted in recommendation on the following issues, which were officially communicated to Eurotunnel (and to the railway undertakings if applicable and where highlighted below) by the CTSA:

- A suitable testing regime for over-height detector failure needs to be implemented and evidence kept of the monitoring arrangements for this procedure;
- An agreed procedure needs to be developed, documented, authorised and issued to workers on what they need to do in the event of both over-height detectors being out of service simultaneously. This should be underpinned by a suitable and sufficient risk assessment;
- Carry out a review of the adequacy (resources, competence, experience) of the M&E maintenance team responsible for providing appropriate and timely technical support/maintenance, and the arrangements for responding to failures of the UK over-height detectors;
- In order to reduce the number of 'false' over-height detector alarms occurring at the UK terminal:

- Provide an analysis of the log of detections between 16.07.2017 – 15.08.2017 in the UK and France and the causes of the alarms triggered.
- Review and analyse the effect of refrigeration units exhausts on the over-height detectors.
- In the light of the analyses undertaken in relation to B1a and B1b (above), take action to reduce the number of ‘false’ alarms being triggered;
- Put in place a suitably robust procedure (for both freight and passenger service platforms) to ensure the over-height detectors on all ramps are tested on a regular basis and suitably frequently and evidence is kept of the monitoring arrangements for this procedure;
- At the French Terminal, over-height detectors were being tested before and after loading the shuttle. This is good practice and provides better assurance that the over-height detectors were working throughout loading. Consider implementing this system in the UK;
- The over-height detector test control panels on platforms B9 and B1 were installed at a considerable height above the ramp, such that staff could not easily and comfortably reach the test button. Check whether other platforms have the same issue and lower the test buttons to a reasonable height to enable all workers to operate them as required;
- Work Instruction UK Customer Services UK Freight Frontier Controls Antenna Detection Tests had been issued without signatures for sign off and authorisation. Look at the amount of time being required to issue new/revised procedures and explore the reasons behind why it can take several weeks before signatures are added;
- Over-height detectors located at border controls for UK-bound cargo could have been tested more promptly. Look at learning from experience and speed of taking corrective action;
- In the short-to medium-term, many extremely skilled technicians, with many years of service at the company, are going to retire. The mechanical and electrical department should, therefore, reflect and draw up a knowledge transfer policy.
- Eurostar should revise and amend its Engineering Change document EF003 by 2 July 2018;
- Eurostar should keep the CTSA informed and up to date of its progress with replacing the link current overload relay (R-OL-16) in the refurbished class 373 fleet;
- Eurostar should clarify and set out clearly the chain of responsibility between EII and Siemens over the changes and modifications made on the E320 fleet and how these are advised to, and meet the requirements for agreement by, the National Safety Authorities;
- Eurotunnel should hold a discussion/workshop to agree what RCC needs regarding radio discipline and safety critical communications and should agree the standard Eurotunnel requires. The agreed standard should then be briefed to staff and form part of staff task observations (supervisory checks);
- Monitor the development of the plan to digitalise track maintenance operations.

- Develop arrangements to ensure the current suite of track standards remains relevant by, for example, introducing a means of reviewing SNCF standards at suitable frequencies;
- Ensure that the criteria for language skills of supervisory staff, contained in the contract between Eurotunnel and its subcontractor Colas, are met. Where supervisory staff, as identified during the inspection, are not bilingual or are unable to communicate in the language of the country where they are operating, put in place provisions to cover the risks generated by this non-compliance;
- Ensure that language skills criteria are being complied with where they appear in other contracts;
- Eurotunnel should have suitable arrangements in place to ensure that the health and safety of its subcontractors is not put at risk due to the level of their language skills when English or French is not their first language;
- Refresh workers' awareness and introduce checks to ensure that the work orders refer to the right Maintenance Instructions;
- Refresh workers' awareness and introduce checks to ensure that the different forms used during maintenance operations are duly completed in accordance with the corresponding Maintenance Instructions;
- Identify Maintenance Instructions needing revision, and update them;
- List all measuring instruments requiring calibration;
- Carry out a review of these measuring instruments to ensure they have undergone any required checks and calibrate any which have been missed.;
- Harmonise the recertification arrangements between France and UK;
- Introduce competence refresh and recertification for welder inspectors in France and the UK;
- Specify rules of suspension of welder certifications;
- With regard to weld checking:
  - Define what checks need to be made and what they should comprise.
  - Develop and implement a system of formal supervisory inspections of welds carried out by Eurotunnel's workers in the UK.
  - Develop and implement a formal system of checking the quality of welds carried out by subcontractors in France and the UK;
- With regard to broken welds and rails action plan:
  - Add in target dates for completion of the actions.
  - Update the action plan for completeness (for example, to include having welder inspectors in the UK);
- Make sure feedback (REX) from the Rolling Stock Department covers the requirements of SAFD 1000:
  - Remind the Rolling Stock Department what feedback has to cover (describe the event, its causes and include a reminder of the rules to follow to avoid a repeat occurrence). The feedback sheets need improving so that staff understand why they have to follow these procedures and the risks involved in not following the procedures in force.

- Make sure submitted feedback is properly followed up;
- Make sure that follow-up by breakdown technicians:
  - covers both actions/recommendations listed on the feedback forms dated 26 February 2016 and 11 April 2016;
  - is permanently traceable;
- When risk assessments are carried out, ensure compliance with the internal requirements of the Eurotunnel SMS. Eurotunnel should review its process of management of technical modifications to:
  - satisfy itself that the staff carrying out rolling stock risk assessments have undergone the necessary training and reached the required level of competence in the assessment of risk;
  - decide whether the progress made in the technical modifications of the propping system complies with the Eurotunnel reference documents. Check the effectiveness of these modifications;
- Follow-up of the intended actions of the Concession Safety Committee (CSC): make sure the actions decided at the CSC meetings are followed up and/or that progress is reported to the CSC meetings, or by other method of high-level steering, and not only on SAP.

27. All recommendations have been added to a consolidated recommendations follow-up table to enable the CTSA to monitor and review Eurotunnel's progress in implementing appropriate measures to comply with these recommendations.

*2. Description of the coverage of legal issues in the annual reports of the railway undertakings and infrastructure manager - availability of annual reports by 30 June [in accordance with Article 9 (4) of the Railway Safety Directive]*

28. The infrastructure manager and railway undertakings have reported their activities in accordance with the requirements of Article 9.4 and Annex I of the Railway Safety Directive.

*3. Inspections*

29. The planned inspection activity was still based on the areas identified by the CTSA experts in their analysis of the Eurotunnel and railway undertakings' SMS. However, the inspection plan provides for flexibility to address concerns revealed by Channel Tunnel activities during the year.

30. In total, seven inspection reports produced by the CTSA experts were sent to the undertakings in 2018. These covered the following topics:

- Strategy and risk control arrangements to prevent potential electrical arcing between freight vehicles being transported and the overhead electrical power system;
- Agent De Feu (Adf) 4th September 2017;
- Inspection of SAFE stations and Piston Relief Ducts;

- Inspection of maintenance management for existing and life-extended TMSTs;
- Follow up inspection on the management of the risks associated with over-height objects at Eurotunnel's UK terminal (aerial detectors);
- Maintenance operations conformity to the applicable reference documents, with particular regard to track and sub-contracting; and
- Effectiveness of the arrangements made by Eurotunnel after three freight shuttle departures with open loaders or lowered propping in 2016.

#### 4. Audits

31. In 2018, Eurotunnel carried out 30 internal audits, and the three railway undertakings carried out a total of 19 internal audits on topics such as infrastructure and rolling stock maintenance, transport of dangerous goods, management of sub-contractors, strategic safety.

#### 5. Summary of measures and relevant corrective actions (amendment, revocation, suspension, important warnings, etc.) related to safety aspects following these audits / inspections

#### **H - Report on the implementation of the common safety method (CSM) for risk evaluation and assessment**

32. In 2018, Eurotunnel reported that the installation of the ElecLink cable would represent a significant change and also carried out a risk assessment under the CSM in respect of its proposal to reinstate four pagodas to its Arbel and WBN type Wagon fleet. Eurotunnel also reported that the CSM was used to assess its passenger shuttle mid-life renovation programme and identified a number of other projects which it identified as likely to bring a significant modification to its railway system: the mid-life overhaul of locomotives, track greasers, smoke and flame detection on Truck Shuttles on departure, fire integrity of UK Terminal buildings, traffic management at the UK Terminal access zone (Longport), as well as the study of the ERTMS (European Rail Traffic Management System).

33. The three railway undertakings reported that all changes considered and undertaken were found to be non-significant in accordance with the definition in the CSM.

#### **I – IGC conclusions regarding 2018 - Priorities**

34. The Channel Tunnel is extremely important. It is used every year by more than twenty million road and rail passengers between the United Kingdom and France and connects the United Kingdom to the high-speed rail network of the rest of Europe. The use of the 50 km long underwater tunnel does not fully meet the Safety in Railway Tunnels TSI, and poses specific safety problems, especially in the event of fire or breakdowns immobilising passengers for hours. It is therefore entirely justifiable that particular attention be paid to the safety rules applicable to the Fixed Link.

35. Priority issues for the future are as follows:

- ongoing review of Eurotunnel's safety assessment for its ElecLink project to ensure that installation and operation of the cable will be managed safely;
- publication and notification in clear terms of all technical, operating and safety rules applicable to the Channel Tunnel to show that they are aligned with interoperability directives and safety regulations;
- continued application to the Channel Tunnel of existing and new European laws, including safety, interoperability and cross-acceptance requirements;
- consideration of how the EU Fourth Railway Package should be transposed in respect of the Channel Tunnel, and the implications of BREXIT for Eurotunnel and users of the infrastructure;
- consideration of the impact of BREXIT on the future of the IGC as a National Safety Authority, and any structural and organisational changes that need to be implemented;
- where it is the Competent Authority responsible:
  - review of applications for authorisations of new passenger and freight rolling stock for use in the Tunnel, and timely assessment of certification applications from railway undertakings proposing to launch new services in the Tunnel;
  - timely assessment of applications for new and renewed safety authorisations and safety certificates to ensure that operations through the Channel Tunnel continue;
- continuous review and improvement of the methods used by the IGC in its activities;
- preparing for and addressing serious safety and security incidents, including the annual repetition of the binational emergency plan, which is a framework for cooperation between the emergency services of both countries in the event of accidents or incidents in the Tunnel; and
- ongoing monitoring of responses to the recommendations of the Eurotunnel investigation bodies (BEA-TT and RAIB) following the fire on an HGV shuttle on 17 January 2015.

## **J - Sources of Information**

36. The following sources were used when drafting this report:

- Eurotunnel Annual Report on Health and Safety for 2018
- GB Railfreight Annual Report on Health and Safety for 2018
- Eurostar Annual Safety Report for 2018
- DB Cargo Annual Safety Report for 2018

## **K - Annexes**

Annex A: Information on railway infrastructure and transport undertakings

Annex B: IGC Structure and Relationships

Annex C: Data on Common Safety Indicators (separate Excel spreadsheet)

Annex C1: Safety-related incidents included in previous reports published by the CTSA



Annex D: Important legislative and regulatory changes

Annex E: Granting of safety certificates and authorisations – Numerical Data

**ANNEX A:** Information on railway infrastructure and transport undertakings

**A.1. Network map**

Maps showing the layout of the UK and French terminals and a schematic diagram showing the running tunnels – including the two crossovers – are shown overleaf.

**A.2 Information about Eurotunnel, Infrastructure Manager for the Channel Tunnel Fixed Link**

**Name:** Eurotunnel

**Address:** UK Terminal, Ashford Road, Folkestone, Kent CT18 8XX

**Website:** [www.eurotunnel.com](http://www.eurotunnel.com)

**Network Statement link:**

[http://www.eurotunnelgroup.com/uploadedFiles/assets-uk/The-Group/Operations/Railways/DRR\\_NS\\_2016\\_EN\\_Final1.pdf](http://www.eurotunnelgroup.com/uploadedFiles/assets-uk/The-Group/Operations/Railways/DRR_NS_2016_EN_Final1.pdf)

**Start date of commercial activity:** May 1994

**Total track length:** 159 km main tracks plus 50 km secondary tracks

**Track gauge:** UIC

**Electrified track length:** All track, both main and secondary, is electrified

**Voltage:** 25,000 volts alternating current

**Total double/single length track:** 100% double track

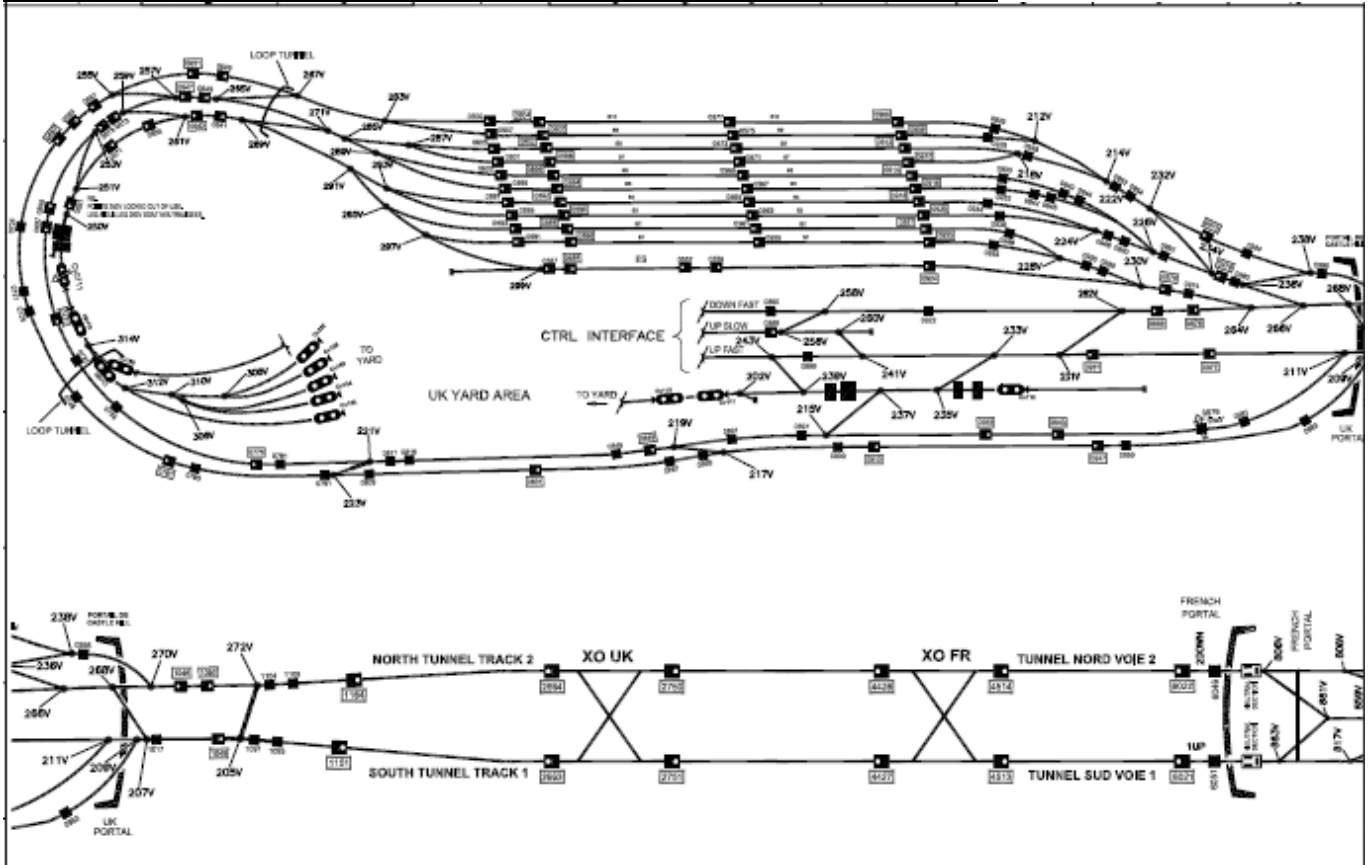
**Total track length – High Speed Line:** 108 km

**Automatic train protection equipment used:** TVM 430

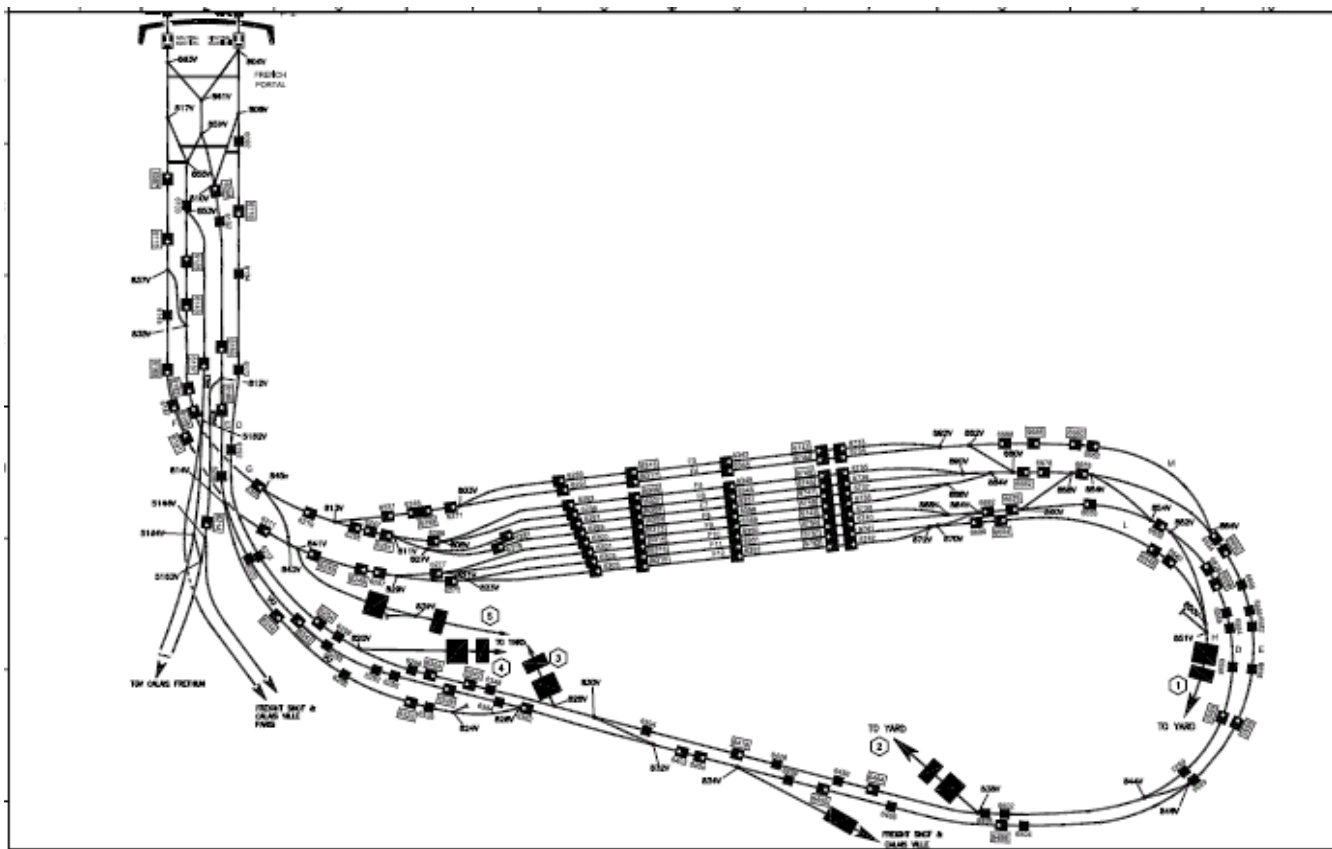
**Number of level crossings:** None on main tracks

**Number of signals:** 655

## Network Map showing layout of UK Terminal and running tunnels



## Network Map showing layout of French Terminal



### A.3 Information about the Railway Undertakings

The railway undertakings which operated trains through the Fixed Link in 2014 were as follows:

**Name:** DB Cargo Rail (UK) Limited

**Address:** Lakeside Business Park

Carolina Way

Doncaster

South Yorkshire

DN4 5PN

UK

**Website:** <https://uk.dbcargo.com/rail-uk-en/start/>

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**Name:** Eurostar International Ltd

**Address:** Times House

Bravingtons Walk

Regent Quarter

London

N1 9AW

UK

**Website:** [www.eurostar.com](http://www.eurostar.com)

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**Name:** GB Railfreight

**Address:** 3rd Floor

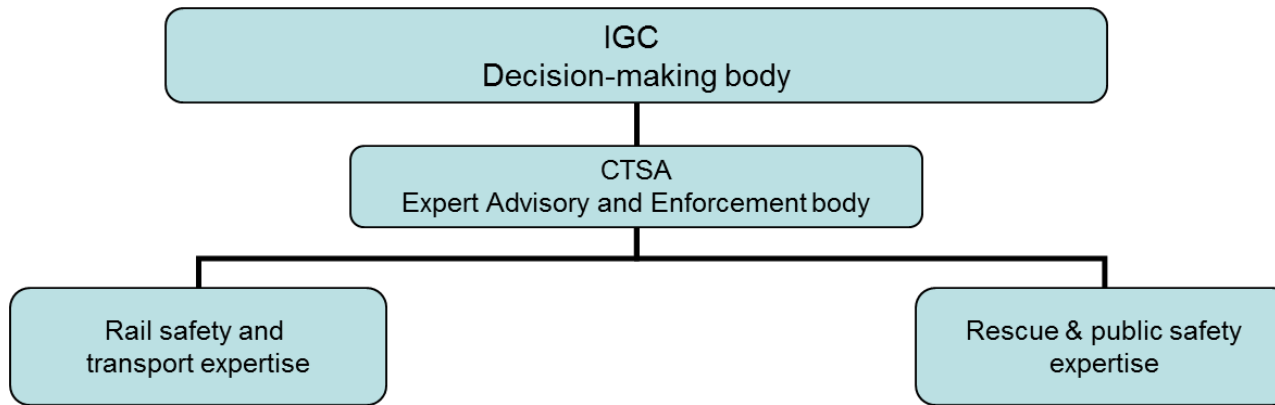
55 Old Broad Street

London

EC2M 1RX

**Website:** [www.gbrailfreight.com](http://www.gbrailfreight.com)

**ANNEX B: IGC STRUCTURE AND RELATIONSHIPS**



Each Government appoints half the members of the IGC which comprises 14 members including at least two representatives of the Channel Tunnel Safety Authority (CTSA).

The composition of the CTSA is determined by the two Governments by agreement and each Government appoints half of its members. In 2018, the CTSA had ten members in total, and its work was supported by a number of advisers, inspectors and auditors.

## **ANNEX C: COMMON SAFETY INDICATOR (CSI) DATA**

Data on Common Safety Indicators for 2018 is shown in a separate Excel file.

## **ANNEX D: Important legislative, regulatory and administrative changes**

	<b>Legal reference</b>	<b>Date legislation comes into force</b>	<b>Reason for introduction (Also specify whether this is a new law or amendment to existing legislation)</b>	<b>Description</b>
<b>General national railway safety legislation</b>				
Legislation concerning the national safety authority	NONE	N/A	N/A	N/A
Legislation concerning notified bodies, assessors, third party bodies for registration, inspection, etc.	NONE	N/A	N/A	N/A
<b>National rules concerning railway safety</b>				
Rules concerning national safety targets and methods	NONE	N/A	N/A	N/A
Rules concerning requirements for safety management systems and safety certification for Railway Undertakings	NONE	N/A	N/A	N/A
Rules concerning requirements for safety management systems and safety certification for Infrastructure Managers	NONE	N/A	N/A	N/A
Rules concerning requirements for wagon keepers	NONE	N/A	N/A	N/A
Rules concerning requirements for entities in charge of maintenance	NONE	N/A	N/A	N/A
Rules concerning requirements for maintenance workshops	NONE	N/A	N/A	N/A
National safety rules applicable to RUs* and safety rules applicable to other parties in the rail sector	NONE	N/A	N/A	N/A
Rules concerning requirements for the authorisation of placing in service and maintenance of new or substantially modified rolling stock, including rules for exchange of rolling stock between Railway Undertakings, registration systems and requirements for testing procedures	NONE	N/A	N/A	N/A

Common operating rules for the railway network, including rules relating to signalling and traffic procedures	NONE	N/A	N/A	N/A
Rules laying down requirements for additional internal operating rules (company rules) that must be established by the Infrastructure Managers and Railway Undertakings	NONE	N/A	N/A	N/A
Rules concerning requirements for staff executing critical safety tasks, including selection criteria, medical fitness, vocational training and certification	NONE	N/A	N/A	N/A
Rules concerning investigation of accidents and incidents including recommendations	NONE	N/A	N/A	N/A

**ANNEX E: Changes in safety certificates and authorisations – numerical data**

E.1 Safety Certificates according to Directive 2004/49/EC

<p>A. To ensure the information on ERADIS is up-to-date, please supply numbers of existing certificates in ERADIS which were valid at the end of the reporting year</p> <p>B. Please ensure that the information provided in this table is in line with the information provided in section "G. Supervision of Railway Undertakings and Infrastructure Managers"</p>	Total number of certificates	Number of Part A certificates in ERADIS	
E.1.1. Number of Part A safety certificates issued in the reporting year and in previous years and still valid at the end of 2018	0	0	

<p>C. To ensure the information on ERADIS is up-to-date, please supply numbers of existing certificates in ERADIS which were valid at the end of the reporting year</p> <p>D. Please ensure that the information provided in this table is in line with the information provided in section "G. Supervision of Railway Undertakings and Infrastructure Managers"</p>	Total number of certificates	Number of Part B certificates in ERADIS		
E.1.2. Number of Part B safety certificates issued in the reporting year and in previous years and still valid at the end of 2018	Number of Part B certificates, for which Part A was issued in your Member State	0	0	
	Number of Part B certificates, for which Part A was issued in another Member State	3	3	

Please provide information on applications for Part A certificates received in the current reporting year for new certificates or existing certificates which need to be renewed or updated/amended			A	R	P
E.1.3. Number of new applications for <b>Part A</b> Safety Certificates submitted by Railway Undertakings in 2018	New certificates	0	0	0	0
	Updated/amended certificates	0	0	0	0
	Renewed certificates	0	0	0	0

Please provide information on applications for Part B certificates received in the current reporting year for new certificates or existing certificates which need to be renewed or updated/amended			A	R	P
E.1.4. Number of new applications for <b>Part B</b>	New certificates	0	0	0	0
	Updated/amended certificates	0	0	0	0



Safety Certificates submitted by Railway Undertakings in 2018	if Part A was issued in your Member State	Renewed certificates	0	0	0
	if Part A was issued in another Member State	New certificates	0	0	0
		Updated/amended certificates	0	0	0
		Renewed certificates	1	0	0

A = Accepted application, certificate already issued

R = Rejected applications, no certificate issued

P = Case is still pending, no certificate issued so far

To ensure the information on ERADIS is up-to-date, please supply numbers of certificates in ERADIS revoked at the end of the reporting year	Total number of revoked certificates in 2018	Number of revoked certificates in ERADIS (which were revoked in 2018)
E 1.5 Number of Part A certificates revoked in the current reporting year	0	0
E 1.6 Number of Part B certificates revoked in the current reporting year	0	0

E.1.7. List of countries where RUs applying for a Part B Safety Certificate in your Member State obtained their Part A Safety Certificate

Name of RU	Member State where Part A Safety Certificate was issued
DB Cargo UK	UK
Eurostar International Ltd	UK
GB Railfreight	UK

E.2. Safety Authorisations according to Directive 2004/49/EC

Please ensure that the information provided in this table is in line with the information provided in section "G. Supervision of Railway Undertakings and Infrastructure Managers"	Total number of safety authorisations		
E.2.1. Number of valid Safety Authorisations issued to Infrastructure Managers in the reporting year and in previous years and still valid at the end of the 2018	1		

Guidance: Please provide information on applications for Safety Authorisations received in the current reporting year for new authorisations or existing authorisations which need to be renewed or updated/amended		A	R	P
E.2.2. Number of applications for Safety Authorisations submitted by Infrastructure Managers in 2018	New authorisations	0	0	0
	Updated/amended authorisations	0	0	0
	Renewed authorisations	1	0	0

A = Accepted application, authorisation already issued

R = Rejected applications, no authorisation issued

P = Case is still pending, no authorisation issued so far

E 2.3 Number of Safety Authorisations revoked in the current reporting year	0
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### E.3. Procedural aspects – Part A Safety Certificates

		New	Updated /amended	Renewed
The average time between receiving the application with the required information and a <b>Part A</b> Safety Certificate being issued to Railway Undertakings in 2018		n/a	n/a	n/a

### E.4. Procedural aspects – Part B Safety Certificates

		New	Updated /amended	Renewed
The average time between receiving the application with the required information and a <b>Part B</b> Safety Certificate being issued to RUs in 2018	if Part A was issued in your Member State	n/a	n/a	n/a
	if Part A was issued in another Member State	n/a	n/a	118

### E.5. Procedural aspects – Safety Authorisations

		New	Updated /amended	Renewed
The average time between receiving the application with the required information and a Safety Authorisation being issued to IMs in 2018		n/a	n/a	n/a