CHANNEL TUNNEL SAFETY AUTHORITY

ANNUAL REPORT

2003 - 2004

French Delegation

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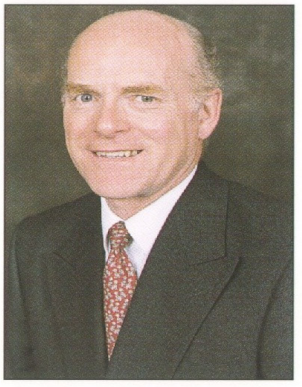

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Bob Smallwood

HM Railway Inspectorate Health and Safety Executive

Co-Chairman, Rail Safety and Technology Working Group

Terry Gates

Secretary

Organisations advising Safety Authority in 2003 - 2004

The Safety Authority consults and is advised by a great many organisations and individual experts. The Authority also has expert advisers on its own staff, on the UK side mainly drawn from the Health and Safety Executive, and on the French side in the *Secretariat General au Tunnel sous la Manche.* The following list indicates the range of organisations consulted by the Authority in 2003 - 2004:

Autorité de Sûreté Nucléaire – Direction Générale de la Sûreté Nucléaire et de la Radioprotection
Building Research Establishment - Fire Research Station
Caisse Régionale d'Assurance Maladie Nord-Pas-de-Calais
Centre d'Etudes des Tunnels (CETu)
Centre Scientifique et Technique du Bâtiment (CSTB)
Police aux Frontières (PAF)
Direction Régionale du Travail et de l'Emploi du Nord Pas-de-Calais
Health and Safety Executive
Home Office
Institut National de l'Environnement et des Risques Industriel (INERIS)
Institut National de Recherches sur les Transports et leur Sécurité (INRETS)
Kent Ambulance Service
Kent County Constabulary
Kent County Council - Emergency Planning
Kent Fire Brigade
Ministère des Affaires Sociales, du Travail et de la Solidarité
Ministère de l 'Ecologie et du Développement Durable – Direction de la Prévention des Pollutions et des Risques
Ministère de l 'Equipement, des Transports, de l'Aménagement du territoire, du Tourisme et de la Mer - Direction des Transports Terrestres
Ministère de l 'Intérieur - Direction de la Défense et de la Sécurité Civiles
Préfecture du Pas-de-Calais - Sous-Préfecture de Calais - SIACEDPC
Service d'Aide Médicale d'Urgence (SAMU) du Pas-de-Calais
Service Départemental d'Incendie et de Secours du Pas-de-Calais
Service Médical d'Urgence (SMUR) de Calais
Société Nationale des Chemins de Fer Français (SNCF)

CHANNEL TUNNEL SAFETY AUTHORITY
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Chairman of the Intergovernmental Commission
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September 2004

Dear Sir

ANNUAL REPORT OF THE CHANNEL TUNNEL SAFETY AUTHORITY 2003 - 2004

I attach the Annual Report of the Channel Tunnel Safety Authority for the period from 1 April 2003 to 31 March 2004.

I am sending a copy of this letter to M Jean-Pierre Ghuysen, the Head of the French Delegation to the Intergovernmental Commission.

Yours faithfully

Michel Quatre

Chairman of the Safety Authority

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INTRODUCTION

History

1. By the Treaty of Canterbury, signed on 12 February 1986, the Governments of the French Republic and the United Kingdom undertook to allow the construction and the operation by private concessionaires of a fixed twin bored tunnel rail link, with associated service tunnel, under the Channel between Cheriton in Kent and Fréthun in the Pas-de-Calais.

2. A Concession Agreement signed on 14 March 1986 completed the legal and financial framework of the Treaty and awarded the Concession to the limited company Eurotunnel. It indicated the general characteristics of the Fixed Link and the rules to be applied during its construction and subsequent operation. Originally planned to last 55 years, the Concession has been extended to 99 years and is now due to expire in 2086.

3. Commercial operations began in May 1994 with shuttle services carrying lorries and goods trains. Services for fast passenger trains - Eurostars – commenced in October 1994 and shuttle services carrying the different types of tourist vehicles (private cars, coaches, camper vehicles, minibuses etc.) were introduced gradually between December 1994 and June 1995.

The Safety Authority's Duties

4. Through the Treaty and the Concession Agreement, the Governments gave themselves the means to monitor first of all the construction and then the operating conditions of the Fixed Link, particularly in matters of Safety. In accordance with Article 10 of the Treaty, an Intergovernmental Commission was established to supervise for the two Governments and on their behalf, all matters relating to the construction and operation of the Fixed Link.

5. Article 11 of the Treaty led to the establishment of a Safety Authority which:

- advises and assists the Intergovernmental Commission on all matters relating to safety in construction and operation of the Fixed Link;
- ensures that national and international safety law is enforced in the Tunnel;
- examines reports concerning any incident affecting safety in the Tunnel, carries out necessary investigations and reports to the Intergovernmental Commission.

6. Article 11 of the Treaty also confers personal responsibility, in an emergency, on the Chairman of the Safety Authority or his agent who have to take the measures necessary for safety and then report to both Governments and the Intergovernmental Commission. This power has never been used.

Membership and Working Procedures of the Safety Authority

7. The Safety Authority is a bi-national body. Each of the delegations is made up of five members who may be replaced by an alternate member if they are unable to attend. It is chaired alternately and for a period of one year by the Head of each Delegation. For the purpose of its duties, the Safety Authority may call on the assistance of the authorities in each Government and any body or expert whom it may choose. Five permanent and specialist working groups, led jointly by a member of each delegation, have been set up to investigate matters brought before the Authority. The working groups provide the detailed technical analysis on which the Authority’s advice to the Intergovernmental Commission is based:

- the Rescue and Public Safety Working Group (RPSWG) met six times during 2003-2004. RPSWG held a technical meeting to discuss the specific issue of the availability of advance information about dangerous goods carried on freight trains;
- the Rail Safety and Technology Working Group (RSTWG) met six times during 2003-2004. There were three meetings of the RSTWG's technical sub-group which was established to examine Eurotunnel's draft formal submission on the Optimisation of HGV Protection (see paragraph 41);
- the Dangerous Goods Working Group (DGWG) met four times during 2003-2004.;
- the Health and Safety Working Group (HSWG) met three times during 2003-2004;
- the Civil Engineering Working Group (CEWG) met five times during 2003-2004.

8. In addition to the five permanent working groups, the Safety Case Steering Group (SCSG) met four times to examine how Eurotunnel's Safety Case should be used in practice and to advise on its revision.

9. A secretariat arranges for the preparation and execution of the Safety Authority's decisions.

10. During the year covered by the report, Roger Lejuez was replaced by Michel Quatre as Head of the French Delegation to the Safety Authority and Roderick Allison was replaced by Richard Clifton as Head of the UK Delegation. Roger Lejuez and Roderick Allison had been involved with the work of the Safety Authority for many years and the Authority is grateful for their contributions. In addition, Stephen Williams was replaced by Bob Smallwood as a member of the UK Delegation to the Authority.

Overview of Year

11. This is the sixteenth Annual Report of the Safety Authority to the Intergovernmental Commission. It deals with the activities of the Authority in the period from 1 April 2003 to 31 March 2004 in the course of which the Authority was chaired by the Head of the UK Delegation. The Safety Authority continued to meet on a monthly basis including a meeting with its authorised inspectors on 8 July 2003.

12. The work of the Safety Authority led, in part, to advice to the Intergovernmental Commission on a number of issues, in particular in respect of modifications to Eurotunnel's safety case and safety arrangements. The Safety Authority was heavily engaged in considering Eurotunnel submissions to the Intergovernmental Commission regarding optimisation of protection of HGV shuttles in the running tunnels and authorisation for bringing into commercial service the Channel Tunnel Rail Link works on the Eurotunnel Concession.

RECOMMENDATIONS DURING THE YEAR ON EUROTUNNEL SUBMISSIONS

13. Eurotunnel made a number of submissions to the Intergovernmental Commission during 2003 - 2004 seeking to adjust and simplify existing arrangements and facilitate operations. The Safety Authority examined Eurotunnel's proposals, to ensure that they did not have an adverse impact on safety, and prepared advice for the Commission. A summary of the issues and conclusions reached on the main submissions is given below.

Authorisation to place into commercial service the Channel Tunnel Rail Link works on the Eurotunnel Concession

14. The Safety Authority considered proposals from Eurotunnel regarding the commissioning of the Channel Tunnel Rail Link works on the Eurotunnel Concession. On 16 June 2003 the Safety Authority advised the Intergovernmental Commission that the works associated with the commissioning of Signalling Room 28, which controls the Eurotunnel/Channel Tunnel Rail Link interface, could be deemed “minor works”, thereby exempting them from the need for authorisation to place into service under the UK Railway (Interoperability)(High-Speed) Regulations 2002. In view of this the Safety Authority advised the Intergovernmental Commission to make a screening decision under Regulation 16 of the UK regulations confirming that the works did not constitute an upgrade. On 25 September 2003 the Safety Authority advised the Intergovernmental Commission that its authority to place into commercial service the final works on the Concession should be granted in accordance with Regulation 14 of the UK regulations. The Channel Tunnel Rail Link including the works on the Eurotunnel Concession Area opened to commercial services on Sunday 28 September 2003. [This work is reported on in more detail at paragraphs 43 – 47 below.]

Optimisation of protection of HGV shuttles in the running tunnel

15. Throughout the previous year and for the major part of 2003/2004 consideration of Eurotunnel’s proposals for optimisation of protection of HGV shuttles in the running tunnels was a major item of work for the Safety Authority and its Working Groups. On 3 December 2003 the Safety Authority was able to recommend that the Intergovernmental Commission approve Eurotunnel’s formal submission on this matter in relation to double line running. Proposals in relation to single line operations were to be the subject of a further formal submission and this was still awaited at the end of the year covered by this report. [This work is reported on in more detail at paragraphs 41 and 42 below.]

Approval of Revised Version of Volume F of the Safety Arrangements (Carriage of Dangerous Goods)

16. The Safety Authority considered a submission containing a revised version of Volume F of the Safety Arrangements relating to carriage of dangerous goods. Comments made by the Safety Authority were taken into account by Eurotunnel. On 20 January 2004, in the light of further revision, the Authority was able to recommend that the Intergovernmental Commission approve the submission. [This issue is reported on in more detail at paragraphs 66 and 67 below.]

Volume G of the Safety Arrangements (Carriage of Disabled Passengers)

17. During 2002-2003, the Safety Authority had asked that the authorised carriage of guide dogs as provided for in the regulations in the two countries should be reflected in Eurotunnel's arrangements. Towards the end of the period covered by this report, Eurotunnel submitted a revised version of Volume G of the Safety Arrangements relating to carriage of disabled passengers that included the requested modifications. The Safety Authority was able to advise the Intergovernmental Commission that the revised version was acceptable.

Modification of Eurotunnel Safety Case

18. During the course of the year covered by this report Eurotunnel submitted modifications to Chapters 2 and 3 of its Safety Case. The Safety Authority advised the Intergovernmental Commission that the modifications proposed were acceptable. [This issue is reported on in more detail at paragraphs 37 and 38 below.]

Eurotunnel's Network Statement

19. Under the provisions of European Directive 2001/14/EC infrastructure managers are required, after consultation with interested parties, to develop and publish a network statement which sets out the nature of the infrastructure available to railway undertakings. The Safety Authority considered a draft of Eurotunnel's network statement and on 19 February 2004 transmitted its comments to the Intergovernmental Commission. The final version of the statement is now available on the Eurotunnel website.

Recommendations arising from the Safety Authority report on the fire on 18 November 1996

20. The single recommendation from the Safety Authority's report on the fire of 1996 for which implementation is still ongoing involves a programme of work to improve reliability and maintainability of crossover doors. This programme of work continues to be monitored by the Safety Authority.

21. The Safety Authority and its working groups continue to monitor Eurotunnel's continued observance of all recommendations in the course of the Authority's inspection programme and through examination of regular reports on particular issues.

SUBMISSIONS OUTSTANDING AT THE END OF THE YEAR

Optimisation of protection of HGV shuttles in the running tunnel – single line operations

22. As reported at para 15 above, at the end of the year a submission from Eurotunnel was awaited in relation to use of the new algorithm for optimisation of protection of HGV shuttles in the running tunnels in respect of single line operations.

Modification to Avant Projet 18 (French Terminal – Civil Engineering and Roads): Proposed Wind Farm Project on Eurotunnel's Coquelles Terminal

23. During the course of the period covered by this report, the Safety Authority reviewed and commented on an advance draft version of a formal submission relating to the proposed construction of a wind farm on Eurotunnel's Coquelles Terminal. At the end of the year Eurotunnel was considering how to proceed with this matter in view of an accident involving a wind farm which had occurred at Boulogne sur Mer on 1 January 2004. [Eurotunnel has since abandoned this project.]

Revision of Volume C of the Safety Arrangements (Railway Operations)

24. Towards the end of the period covered by this report, Eurotunnel had commenced revision of Volume C of the Safety Arrangements relating to railway operations. The substance and contents were likely to remain unchanged overall but the document needed to be adapted to reflect Eurotunnel's internal reorganisation to separate more clearly its roles and responsibilities as infrastructure manager and railway operator. The objective was to split the Volume into two parts with Volume C1 relating to Eurotunnel's role as infrastructure manager and Volume C2 relating to its role as railway operator.

Onboard Fire Suppression System on Freight Shuttles

25. During the period of this report, Eurotunnel presented the Safety Authority with the functional specification for an onboard fire suppression system for installation on freight shuttles. At the end of the period covered by this report an advance version of a formal submission to the Intergovernmental Commission on this subject was anticipated. [This issue is reported on in more detail at paragraph 51 below.]

Carriage of Commercial Goods on Tourist Shuttles

26. During the period covered by this report, the Safety Authority considered Eurotunnel's proposal to carry out a 3-month trial of an express overnight courier service travelling through the Tunnel on tourist shuttles. The Safety Authority raised questions regarding the segregation of the vehicles, arrangements for ensuring dangerous goods were excluded, and potential fire loading of the vehicles involved. Eurotunnel agreed to undertake further work on these matters. At the end of the period covered by this report, the Safety Authority was waiting to receive further information from Eurotunnel on this matter.

SAFETY CASE

Background

27. In view of the role played by the Safety Case as a reference document, the Intergovernmental Commission decided that the Eurotunnel Safety Case should have an officially recognised status ratified by the bi-national bodies. It was therefore decided that the Eurotunnel Safety Case (a description of Eurotunnel's safety management system), with the Safety Cases of the railway operators using the Tunnel as supporting documents, should be accepted by the Intergovernmental Commission on the advice of the Safety Authority. The Intergovernmental Commission's decision enabled Eurotunnel to receive an exemption under the UK Railways (Safety Case) Regulations 2000.

28. The Intergovernmental Commission wrote to Eurotunnel on 6 April 2001 to specify the points to be included in its Safety Case and in those of the railway operators. Following in depth analysis and assessment of Eurotunnel's proposals by its Safety Case Steering Group, on 12 December 2002 the Safety Authority was able to advise the Intergovernmental Commission that the documents submitted were acceptable. The Intergovernmental Commission formally accepted the Eurotunnel Safety Case on 11 February 2003.

29. Following Intergovernmental Commission acceptance the Safety Authority has focused on three main areas :

- how the Intergovernmental Commission and the Safety Authority would use the Safety Case;
- monitoring how Eurotunnel is using the Safety Case;
- the involvement at an early stage of the Safety Authority (through its Safety Case Steering Group) in Eurotunnel's development of the next revision of the document.

Safety Authority Statement of Policy

30. The Safety Authority developed and agreed a policy concerning its future action on the Safety Case. The Statement set out ways of working and, importantly, arrangements for monitoring the Safety Case and its development in the future.

Monitoring the Safety Case

31. It was recognised that it would be essential that the Safety Authority adequately monitored the compliance of Eurotunnel's operations with the Safety Case. A monitoring plan was developed to carry out an effective on-going review of Eurotunnel's operation based against the Safety Case. The Safety Case monitoring plan programme was developed to run in tandem with the Safety Case for a 3-year period and using the following methods:

- Inspections
- Flow of information - regular reports from Eurotunnel such as Duty Services Managers (DSM) reports, monthly summaries of safety events known as Flash Reports, System Safety Committee Minutes, etc
- Information gained from the investigation of accidents / complaints
- Audit reports (both internal and external)
- Information from Eurotunnel concerning the interface with the Train Operating Companies (TOCs) and change management.

32. Priorities for inspection were set, based on areas identified by the experts during their analysis work on the Safety Case. These priorities include:

- competence and competence assurance;
- audit, and the adequacy of the audit programme;
- contractor management;
- infrastructure maintenance, particularly track and train maintenance;
- the interface with the safety cases of the TOCs;
- emergency arrangements;
- incident and accident investigation; and
- risk assessment, particularly the adequacy of risk assessments associated with change management.

Cross cutting inspections

33. The new status of the Safety Case led to a new development in the Safety Authority's inspection policy. This was to conduct themed inspections looking in depth at specific issues selected from the Safety Case. It was recognised that the approach to inspections of such topics needed to be much more broad based and involve all relevant working groups. This necessitated a new style of inspection, which was piloted by a small binational team of inspectors. The two topics chosen for 2003-2004 were :

- Eurotunnel's incident and accident and precursors investigation and a process known as the Retour d'experience (REX), a process to inform others of measures taken to prevent another similar event;
- Eurotunnel's management of contractors.

34. The inspections focused first on Eurotunnel's policy on the topic and went on to examine communication, control, implementation on the ground and arrangements for review.

35. A "champion" (co-ordinator, leader), supported or "paired" with an inspector from the opposite delegation to ensure bi-national co-ordination was appointed for both subjects. Their role was to act as a focal point for that topic, keep progress on all aspects under review, and ensure that the issue was fully taken into account in other relevant Safety Authority work.

36. The work was completed on time and the Safety Authority fully endorsed the reports submitted by the Champions and Pairs. The reports summarised the results of the individual inspections that comprised the themed cross-cutting exercise and made recommendations, which the Safety Authority adopted. The Authority wrote to Eurotunnel enclosing the summary reports and seeking views on both the cross cutting process and the specific recommendations in the reports.

Modifications to Safety Case

37. During the period covered by the report, Eurotunnel proposed two modifications to the previously accepted Safety Case:

- **Chapter 2 - Structural Change to the Organisation**

  Eurotunnel proposed editorial modifications to the text to take into account organisational changes and restructurings which had taken place within the company.

- **Chapter 3 – Channel Tunnel Rail Link Interface**

  Detailed examination of the safety case for the Channel Tunnel Rail Link interface was carried out. This included analysis of the risk assessment and review of the implications of the interface on Eurotunnel's Safety Case. In the light of this, Eurotunnel proposed a new sub-section for incorporation into Chapter 3 of the Safety Case.

38. The Safety Authority advised the Intergovernmental Commission that the modifications proposed were acceptable.

Public version of the Safety Case

39. In the light of discussions with both the Safety Authority and its Safety Case Steering Group, Eurotunnel agreed to make a version of its Safety Case available to the public.

Electronic Version of the Safety Case

40. During the year the Safety Authority took a close interest in Eurotunnel's development of an electronic version of the Safety Case. A demonstration given by Eurotunnel showed how it would be possible to select one of the points specified by the Intergovernmental Commission (see paragraph 28 above) and hyperlink to the places in the Safety Case which show how this had been met. There would also be hyperlinks to Eurotunnel's Engineering Change Management System and Safety Parameters. Eurotunnel confirmed that all other internal documentation referred to in the Safety Case would also be linked.

OTHER KEY AREAS CONSIDERED DURING THE YEAR

Railway Operations

Optimisation of Protection of HGV Shuttles in the Running Tunnels (Phase 2 – Running Tunnels)

41. Consideration of Eurotunnel's proposals for optimisation of protection of HGV shuttles in the running tunnels continued to be a major item of work for the Safety Authority and its working groups during the course of the year covered by this report. The Rail Safety and Technology Working Group took the lead in dealing with this matter and held three further meetings of its technical sub-group which was established specifically to deal with this issue. The sub-group considered and advised on both the formal submission and a range of technical supporting documents submitted by Eurotunnel. On 3 December 2003, in the light of substantial discussion and, in particular, the provision of further assurances by Eurotunnel about the compatibility of existing systems with the new traffic management controls, the Safety Authority was able to advise acceptance of the formal submission by the IGC in relation to double line running.

42. Proposals in respect of single line operations needed to be the subject of a separate formal submission to the Intergovernmental Commission. At the end of the period covered by this report, Eurotunnel had started work on the specification for such a submission. It was anticipated that the formal submission would be made to the Intergovernmental Commission during July 2004 with a view to commencement of the new arrangements for single line running around October 2004.

Channel Tunnel Rail Link (CTRL) Interface

43. The Safety Authority continued to ensure that the new works associated with the connection between the CTRL and the Concession were being developed to the appropriate health and safety standards, and that risks during the course of the work were being properly managed.

44. More specifically, the Safety Authority advised the Intergovernmental Commission on the extent to which the connection between the new line and the Concession and the associated signalling and other works would constitute an upgrade in terms of the requirements of the High-Speed Interoperability Directive and the UK regulations which implement the Directive.

45. On 16 June 2003 the Safety Authority advised the Intergovernmental Commission that the works associated with the commissioning of Signalling Room 28, which controls the Eurotunnel/Channel Tunnel Rail Link interface, could be deemed "minor works", thereby exempting them from the need for authorisation to place into service under the UK Railway (Interoperability)(High-Speed) Regulations 2002. At the same time the Safety Authority advised the Intergovernmental Commission that the final works would need to be subject to authorisation under the regulations prior to opening to commercial service on Sunday 28 September 2003. Such authorisation would need to be sought on the basis of a Technical File prepared by a Notified Body and submitted by Eurotunnel.

46. With its letter dated 22 September 2003 to the Intergovernmental Commission, Eurotunnel confirmed that the Technical File for the Channel Tunnel Rail Link was complete and sought authorisation from the Commission to place into service the works located within the Concession. The Technical File contained all the necessary Certificates of Conformity, as well as the required Declaration of Conformity. On 25 September 2003, after an examination and review of the Technical File, the Safety Authority was able to recommend

to the Intergovernmental Commission that its authority to place into service the works on the Concession should be granted in accordance with Regulation 14 of the UK regulations. The Channel Tunnel Rail Link, including the works on the Eurotunnel Concession Area, opened to commercial services on Sunday 28 September 2003.

47. While the Safety Authority was able to recommend authorisation, it nonetheless had some concerns about the suitability and completeness of the documentation provided by Eurotunnel and, in particular, information about derogations granted and assessments made. Work to address these concerns was continuing at the end of the period covered by this report.

Handling Future Interoperability Projects

48. The CTRL interface (see paras 43-47 above) was the first project on the Eurotunnel Concession Area to which the requirements of the Interoperability Directives applied. At the end of the period covered by this report the Safety Authority, drawing on the lessons to be learnt from the CTRL interface project, started to develop draft guidance on procedures to be followed in respect of future projects. When finalised the Safety Authority will submit the draft guidance to the Intergovernmental Commission for it to consider issuing as the "supervisory authority" in respect of the Concession Area.

Redesign of the SRCC (Stand-by Rail Control Centre on the French side)

49. Eurotunnel kept the Safety Authority informed of its plans to redesign the SRCC as an alternative RCC. Towards the end of the period covered by this report, Eurotunnel employed a new design and ergonomic company which drew up plans for re-configured workstations that were both compliant with ISO standards and acceptable to the SRCC staff. At the end of the year Eurotunnel was anticipating that the new IT equipment would be installed during late July 2004 and that the alternative RCC would become operational in early September 2004 in Coquelles.

Rolling Stock Issues

50. Y25 Bogie Anchors on the Arbel Shuttle Wagons – In the light of several incidents between May and September 2003, Eurotunnel informed the Safety Authority that problems had been experienced with the Arbel Y25 bogies and, in particular, the safety stops (anchors). Comprehensive tests were carried out which involved modifying the tightening of the safety stop and its fastening, and analysing bogie behaviour. Successful corrective action was taken to modify the safety stops to reduce their inertia and thereby reduce vibration; modify the fastening device to prevent the anchors becoming loose; add a strap and a cable to hold the stops in place in case they become loose; and reduce the interval between profiling of the wheels.

51. Onboard Fire Suppression System on Freight Shuttles - Following the fire in November 1996, Eurotunnel had sought to develop a fire suppression system for installation onboard HGV shuttles at the request of their insurance companies. During the period of this report, Eurotunnel presented the Safety Authority with the functional specification for an onboard fire suppression system for installation on its Breda freight shuttles which comprise about half of Eurotunnel's total HGV shuttle fleet. The Safety Authority considered that as this system was being developed principally for purposes of asset protection it could not be used to support a possible reduction in the estimation of risk to people. The Safety Authority advised that while the system was being developed and tested, it would be important for Eurotunnel to give consideration to issues such as: the impact on HGV shuttles and their loading; the impact on current arrangements for stopping trains; the effect on ventilation

system; the impact on the water supply in the tunnel; and the effect on the catenary. During the course of the year a prototype system was installed which incorporated a pump wagon and four carrier wagons. The prototype was incorporated into a complete shuttle and static and dynamic tests were performed. This shuttle was not used for commercial service. At the end of the period covered by this report an advance version of a formal submission to the Intergovernmental Commission on this subject was anticipated.

52. Smoketightness of Tourist Shuttles - During routine trips on tourist shuttles members of the Safety Authority and its inspectors observed that several of the fire resistant pass doors on the tourist shuttles were not air-tight as there was a larger gap than normal around the inflatable door seals. The Safety Authority brought these observations to the attention of Eurotunnel. In response, Eurotunnel wrote to the Safety Authority giving details of the rolling stock maintenance programme for the doors, together with the fault reporting system used by train crew members to assure remedial action. The Safety Authority considered Eurotunnel's response and agreed that inspectors would continue to monitor the issue in the course of their activities.

Infrastructure and Track Issues

53. Track to Train Radios - The Safety Authority continued to monitor the existing communications conditions that Eurotunnel and the train operating companies experience within the Tunnel. Eurotunnel hired a consultant who identified four zones where there had been loss of coverage and proposed remedial measures. As a result, inspections are carried out every two months and a maintenance programme has been implemented. Staff in the Rail Control Centre also continued to monitor the situation and provide feedback. To comply with control and communication requirements, Eurotunnel intends to fully transfer to a global satellite mobile system (GSM-R) by 2007/08. All users of the Tunnel are committed to this transfer so the change will not effect operations.

54. Support Blocks and Rail Fastenings (Operation Tapis) - During the period covered by this report, the Safety Authority continued to monitor Eurotunnel's programme of work to replace rail support blocks and the links between the blocks and the block supports in areas of the running tunnels where there had been deterioration due to wetness – "Operation Tapis". By the beginning of March 2004, the upgrading of tracks in the worst damaged wet areas had been completed and 990 blocks in the less damaged areas had been replaced. For the second part of the project, Eurotunnel intend to use expert contractors to repair the affected 2500m, by raising the track to clean the surrounding area and strengthen the concrete blocks by covering them with bonding resin. This work was scheduled to commence in May 2004.

55. Rail Breakages and Broken Rail Welds - During routine inspections of the tunnel, Eurotunnel technicians identified a number of rail defects and weld breaks. A technical analysis was carried out that identified a pattern in the geographical distribution of the crack growth. Eurotunnel concluded that the main factors contributing to the defects had arisen from the increase in HGV traffic from 1999 together with the weight of the vehicles. As a result of the analysis, satisfactory welding had since been carried out on rails and welds that are subject to breaks and cracks.

56. Maintenance of Verrou Carter-Coussinet Clamp Locks (VCCs) - During the year covered by this report, Eurotunnel identified two types of problem being experienced with clamp locks. Firstly, some of the hollow bolts, which allow movement to the rod that controls positioning of the points had broken off. Secondly, cracks had appeared in the housing of the clamp locks. Eurotunnel's analysis revealed that this phenomenon only affected bolts

that had been manufactured before 1993. During its maintenance programmes, Eurotunnel upgraded and systematically replaced all the bolts irrespective of whether they were broken.

Emergency Arrangements

Information About Dangerous Goods Carried on Freight Trains

57. During the course of the year there was considerable discussion between the Safety Authority and Eurotunnel about the need for information on dangerous goods carried on freight trains available to the emergency services before trains enter the Concession Area. The emergency services consider that it is important to know in advance the nature, amount and location of dangerous goods carried so that, in case of incident, they have all the information required before they set off to intervene in an incident. A six month trial using fax transmissions was put in place and, at the end of the period covered by this report, the arrangements were continuing. This system will be maintained pending the development of a computer based system between Eurotunnel and the train operating companies for the transmission of the relevant information.

Trains Stopped Behind HGV Shuttles Inside the Tunnel

58. During the discussions on Eurotunnel submission on Phase II of the Optimisation of Protection at the Rear of HGV shuttles, it was decided that there ought to be procedures dealing with trains stopped behind an HGV shuttle which were unable to reverse. Following discussion with the Safety Authority, Eurotunnel issued a new procedure in order to cover that eventuality.

Chemical, Biological, Radiological and Nuclear (CBRN) Issues

59. The bi-national Emergency Planning Committee, a sub-group of the Safety Authority's Rescue and Public Safety Working Group, studied the risks posed by a CBRN incident in the Channel Tunnel or on the terminals. The training of emergency personnel is ongoing, exercises have been planned and supplementary protective equipment has been supplied by Eurotunnel.

Service Tunnel Transport System (STTS) Command Vehicle

60. During a routine inspection, faults were discovered in the equipment used to connect the STTS phone lines to the sockets in the service tunnel. The Safety Authority brought these faults to the attention of Eurotunnel. As a result, Eurotunnel revised and improved its maintenance regime.

Eurotunnel Train Crews Language Skills

61. The Safety Authority noted that language skills of the tourist shuttle crews appeared to have deteriorated over the past year. The Safety Authority considered that this could have implications for safety in case of incident. In view of this, the Safety Authority asked Eurotunnel to review the training regime and ensure that its crews could converse reasonably well in both English and French.

Bi-National Emergency Plan

62. The Channel Tunnel Emergency Bi-national Plan was issued in 1994 when Eurotunnel began commercial operations. The Plan is subject to regular review and was last updated in February 2000. During the course of the year covered by this report work took place on a further revision of the plan to make it more operationally effective and succinct. A fully revised version is due to be issued in 2004-2005.

Exercises

63. The Safety Authority continued to monitor carefully the development of emergency plans including practical exercises to test emergency procedures. During the period covered by this report, the following bi-national exercises were conducted:

BINAT 14

The Exercise took place in the early hours of Sunday 14th September 2003, with all commercial services being suspended from 00h01 to 06h00 Central European Time. The scenario was the collision of a Eurotunnel Freight Shuttle with a fractured cooling pipe in a Running Tunnel. The notional collision resulted in a large number of simulated injured passengers, requiring the activation of the Channel Tunnel Bi-National Emergency Plan.

The principal objectives focused on the bi-national response to an emergency situation involving a large number of casualties, 37 in total.

The bi-national emergency service medical evacuation from the incident site to a safe haven (the Service Tunnel) proved successful as well as the triage process and subsequent medical treatment on site, and the evacuation by Shuttle train out of the tunnel.

The time taken to achieve this objective, with bi-national emergency medical team intervention, amounted to 2 hours 56 minutes.

As with all exercises, especially of this size and complexity, a number of opportunities for improvement were identified.

TABLEX 10

This annual exercise took place on 18 November 2003. It took the form of a table-top exercise and concerned the procedures used for survivor reception at the passenger terminal buildings.

COMEX

The exercise was held on 16 October 2003. It consisted of a discussion on the proposed new on-board fire detection and suppression system for the HGV shuttles (see paragraph 51 above).

Carriage of Dangerous Goods

Traffic Flow

64. A small proportion of freight traffic involves dangerous goods, and because of the particular circumstances of the tunnel, Eurotunnel places stringent restrictions on what is permitted. These restrictions are set out in Volume F of Eurotunnel's Safety Arrangements ("Carriage of Dangerous Goods").

65. The Safety Authority continued to monitor information about volumes of dangerous goods passing through the Tunnel in containers on freight trains and in HGVs on Eurotunnel's shuttle service. There was a reduction in the volume of traffic during the summer holiday period, but this recovered by the autumn. Stability in the low number of HGVs refused by Eurotunnel for non-conformity with Volume F reassured the Safety Authority as to the awareness of the requirements amongst HGV operators.

Approval of Revised Version of Volume F of the Safety Arrangements (Carriage of Dangerous Goods)

66. At the end of the previous year and the start of the period covered by this report, the Safety Authority discussed with Eurotunnel the amendments needed to the list of dangerous goods at Appendices A and B to Volume F of the Safety Arrangements in order to integrate the new changes to the international regulations, i.e. ADR/RID that were applicable from 1 July 2003.

67. In the light of these discussions, Eurotunnel submitted a revised version of Volume F to the Intergovernmental Commission on 23 December 2003. In addition to the amendment of the two Appendices, Eurotunnel took the opportunity to make a number of relatively minor amendments to the text of Volume F partly to reflect reorganisations, and associated changes in titles and terminology, that had taken place within the company. These amendments were without prejudice to the more substantive changes that might be necessary in the light of the conclusion of the work reported at paras 68 and 69 below. On 20 January 2004, the Safety Authority was able to recommend that the Intergovernmental Commission accept the formal submission.

Compliance with Volume F of the Safety Arrangements in respect of Carriage of Dangerous Goods by Freight Trains

68. Throughout the previous year, the Safety Authority had discussed with Eurotunnel its arrangements for meeting its responsibility to ensure that requirements of Volume F of the Safety Arrangements relating to the carriage of dangerous goods were complied with in respect of freight trains. The Safety Authority had written to the Intergovernmental Commission on 27 February 2003 drawing its attention to difficulties being encountered in reaching agreement on this matter.

69. During the year covered by this report further discussions took place which led to agreement in principle between the Intergovernmental Commission, the Safety Authority and Eurotunnel. Following on from this, the Safety Authority has been taking action to satisfy itself that this agreement in principle is reflected in Eurotunnel's internal documentation which underpins Volume F of the Safety Arrangements. At the end of the period covered by this report this work was continuing. In the light of its completion, consideration will be given to the need for further amendment of the Volumes of the Safety Arrangements.

RID Negotiations – Committee of Experts Meetings

70. During the period covered by this report, the Intergovernmental Organisation for International Carriage by Rail (OTIF) Committee of Experts discussed proposed amendments to RID. Members of the Safety Authority and its Dangerous Goods Working Group attended in their capacity as national experts. The outcome of the OTIF discussions was satisfactory as regarding maintenance of appropriate restrictions for dangerous goods in the Channel Tunnel.

Civil Engineering and Fixed Equipment

Fixed Equipment

71. The Safety Authority continued to receive and monitor monthly reports from Eurotunnel on the maintenance of fixed equipment and the reliability and modification of the undersea crossover doors. A number of meetings took place between Eurotunnel and Safety Authority experts on these topics.

72. As regards the maintenance of fixed equipment, the reports confirmed that the completion rate for preventive work is consistently high, the average monthly figure being 90+% and the quarterly average figure being close to 100%, as compared to a target figure of 85%. This appears to be reflected in the results of the regular inspections of the cross passage doors (CPDs), air distribution units (ADUs), and piston relief ducts (PRDs), which throughout the year have consistently revealed comparatively few faults. Expressed as "anomalies from expected standards" in percentage terms, the majority of monthly figures were 0%.

73. The reliability of crossover door operation has continued to level out on an averaged basis at less than the 5% failure rate target figure agreed with the Safety Authority. This is considered to be evidence that their modification is leading to the anticipated improvement in maintainability. Given the comparatively small number of operations, there have been occasional monthly failures to achieve the target, but the averaged figures over the last 12 months are 1.87% on the UK side and 4.86% on the French side. The apparent disparity between the two sides was noted and is the subject of on-going investigation.

74. As specified in the monitoring programme, an inspection was undertaken during the year relating to the maintenance of the CPD's, PRD's and lighting. This revealed the following:

- by May 2004 the objective of all PRDs having a ten-yearly maintenance will have been achieved;
- the 'experimental' CPD maintenance programme was continuing (quarterly for 20% of the doors and monthly for the remaining 80%);
- availability of lighting was at a high level (greater than 96%) across the running tunnels, service tunnel and both terminals.

These results are consistent with those identified during a similar maintenance inspection last year and are considered to demonstrate that the relevant procedures are appropriate and that their implementation has been consistent and rigorous.

Engineering Management System and Safety Critical Systems

75. The Safety Authority's inspectors undertook a routine review and inspection of the tunnel engineering management system (EMS) and associated maintenance procedures. This is a complex computer based system that controls and monitors the operation of the fixed equipment in the tunnel that carries out tasks such as ventilation and fire detection. The inspectors found that recommendations made following previous inspections had largely been taken into account. Also, Eurotunnel had started to make further improvements to these systems and was making plans to replace ageing computer hardware.

76. The Safety Authority accepted Eurotunnel's proposal to modify the Engineering Management System to delay the closing of the PRDs when a fire alarm is activated. This modification was aimed at reducing spurious alarms in the tunnel due to dust. Subject to conditions requested by the Safety Authority, Eurotunnel implemented the new arrangements on a trial basis. The Safety Authority is monitoring the trial and has asked for reports in the light of experience of the new arrangements.

Civil Engineering

77. The Safety Authority's activities were focused on finalising the technical development of the tunnel lining monitoring strategy and on carrying out a small number of audits of Eurotunnel's inspections in the tunnels, working within the principles set out in the strategy.

78. Another ongoing activity was the overview of the geotechnical monitoring of the Castle Hill area. In 2003-2004 this involved assessment of both the annual geotechnical monitoring survey and also of the 5-year geotechnical review of Castle Hill.

79. Geotechnical monitoring of a number of slopes on the landward side of the UK was undertaken by Eurotunnel and a review of this work is in progress.

80. At the end of the period covered by this report preliminary work was underway on developing a monitoring strategy for all structures on both terminals along the lines of the tunnel lining strategy. This is likely to be a major project given the number and variety of structures built to date.

81. In order to estimate the leakage of air, from the ventilation systems from one running tunnel to another, an on-site assessment of the crossover doors was undertaken. At the end of the period covered by this report the degree of leakage through the doors and, in particular, the criticality of such leakage, remained the subject of on-going discussions with Eurotunnel.

Electrical Issues

82. A two-day inspection of the power systems within the concession was undertaken on 5 and 6 January 2004. Outstanding matters from an earlier inspection carried out in September 2002 were reviewed during the course of this inspection. The testing of the effectiveness and efficiency of the main substation earthing systems was a matter that remained to be addressed and, at the end of the period covered by this report, discussions with Eurotunnel were continuing on this matter. The majority of other matters had been addressed in a satisfactory manner.

83. At the end of the period covered by this report the Safety Authority awaited a copy of a report being prepared by Eurotunnel into the future electrical power equipment replacement programme. Some replacement work was already underway, for example replacement of uninterrupted power supply battery systems for pumping stations.

84. In previous years the safe systems of work for working on or near live electrical equipment (in particular the power supply systems) had been investigated and found to be satisfactory. Following on from that work, in the course of 2003-2004 a comparison was made with safe working practices adopted for the traction catenary system. The comparison indicated that acceptable safe working practices were being adopted for both the power systems in general and for the traction catenary system.

INCIDENTS AND ACCIDENTS

Reporting Arrangements

85. Arrangements for immediate notification of incidents and accidents by Eurotunnel to the Safety Authority and regular periodic provision of information on safety aspects of operations were first agreed during 1995/96. These arrangements have been revised from time to time in the light of experience. The Safety Authority wrote to Eurotunnel on 30 January 2003 to formalise changes in the list of events for which an immediate report is required and to update the list of periodic (daily, monthly, and annual) reports. The Safety Authority also endorsed the introduction of a revised standard format for incident reports to make them more comprehensive and more analytical.

86. The Authority takes advice from the appropriate Working Group(s) on each incident/accident reported and seeks further information or explanation from Eurotunnel as necessary before reaching a conclusion on safety implications and any remedial measures to avoid recurrence. The Authority monitors the correct implementation of actions arising from recommendations following the investigation of accidents and incidents.

Notified Incidents 2003-2004

87. In the period 1 April 2003 – 31 March 2004, there was a total of 128,102 train movements, comprising 71,923 HGV shuttles, 34,975 Tourist Shuttles, 16,572 Eurostars and 4,632 freight trains. In this period, a total of 87 incidents were reported to the Safety Authority under the formal arrangements. In addition, there were 4 other potentially serious incidents, which Eurotunnel reported to the Safety Authority although they fell outside the formal reporting
arrangements. These are reported on at paragraph 101 below.

88. The reported incidents included 21 instances of fuel spillages from road vehicles; 26 instances of unscheduled stops in the tunnel for over 30 minutes; 6 occasions of closed markers being passed; 12 broken rails and broken rail welds and 4 detections of fire and smoke; 9 instances of evacuation from the train due to various alarms being activated.

89. Other incidents included discharge of Aqueous Film Forming Foam (AFFF),
that was caused by heavy smoke emanating from the tyres of a tourist vehicle; 4 track deformations that resulted in the replacement or repair of faulty blocks; and an evacuation from an HGV shuttle due to a rupture of a brake pipe on a rear locomotive.

Fuel Spillage

90. The instances of fuel spillages were of varying degrees of potential seriousness ranging from the rupture of fuel tanks to relatively minor leaks from overfilled tanks.

91. There were 4 instances of fuel spillages from vehicles on Tourist Shuttles. Emergency instructions were applied where Aqueous Film Forming Foam (AFFF) was either automatically released or the manual release of halon due to the presence of smoke. 2 cases led to longitudinal evacuation and 2 cases lead to cancellation of the following missions.

92. There were 17 fuel spillages on HGV shuttles. Vehicles were recirculated to other shuttles before a return to service. These spillages caused the late departure of 7 affected missions and in 2 cases led to the cancellation of following missions.

Unscheduled Stops in Tunnel

93. There were 26 instances of unscheduled stops in the tunnel of over 30 minutes. The principal reasons for stoppage were as follows:

- Binding Brakes Alarms – There were10 instances of trains stopping due to the binding brake alarm being activated. In all cases, the RCC ordered the driver to perform a controlled stop. Except in 2 cases, these instances caused considerable cancellations and delays. In one instance the driver inspected his train and isolated the axle concerned and in the other instances, the drivers were able to restart the trains after the appropriate inspections were completed.
- Loss of detection of switch/points – There were 2 instances were the driver experienced the loss of detection at the French Crossover.
- Traction problems – There were 2 instances of stoppage due to traction problems. In one incident, a National Railways Freight train was being rescued, that caused the stoppage of the following Eurotunnel HGV Mission. In the second incident, due to the stoppage and rescue of a Freight Mission, an HGV Mission was stopped on the approach to the UK Crossover as the crossover door had failed during opening.
- Suspect package on lower deck of tourist shuttle - The driver advised the RCC that a suspect package had been found and the Mission was directed to the Emergency Siding on the UK Terminal. Passengers were evacuated and commercial services were suspended until the end of the incident was announced. An inquiry was subsequently undertaken and resulted in several recommendations. Eurotunnel implemented the most crucial recommendations soon after the incident. These included revised train crew briefings with regard to checking of trains before departure, revised procedures and training for personnel involved in such incidents and a regime of table top exercises to test plans and procedures.
- Derailed Wheel Detection (DWD) Alarm being activated – There were 2 incidents were the alarm was activated and on both occasions the Drivers were instructed to make a controlled stop and carry out an inspection of the trains. Once the Drivers had advised the RCC that there had been no derailment, and had found no abnormalities, they were instructed to complete their journeys.

94. Reasons for other unscheduled stops included

- Loss of the safety loop for monitoring the position of the wagon propping jacks which are lowered during loading and raised during travel;
- TVM (track to train transmission system) problem;
- Leakage in the main brake pipe;
- Total loss of traction power;
- Ist Fixed alarms and “9” further 2nd Fixed alarms;
- Abnormal noise from the roof of rear locomotive;
- Hot box detection emergency alarm.

95. In addition, there were a further 34 incidents reported in the following categories.

Fire and Smoke Detection Systems

96. There were 4 instances of reported fire and smoke. The first involved smoke coming from the bonnet of a car on the upper deck of a tourist shuttle. The affected wagon and adjacent wagons were evacuated and the Fire Brigade authorised the unloading of the vehicles from the incident wagon. However, the procedure of a “Moving Train Incident” was not correctly applied and a further inquiry was undertaken. Eurotunnel reviewed its on train communication procedures and reminded crews of the instructions for fire-extinguishing

equipment. The second incident involved the fire alarm being set off by the "Manual Call Point". The customer declared that smoke was coming from his vehicle. Crew Members applied the emergency procedure that resulted in a longitudinal evacuation of the affected and nearby wagons. All actions taken by the various people involved conformed to safety rules and the shuttle departed after the incident vehicle was removed. The third incident reported smoke underneath the AMC during unloading. Eurotunnel personnel used fire extinguishers onboard the AMC as well as those on the platforms before the arrival of the Fire Brigade. The fourth incident involved a level 2 smoke detection alarm that resulted in a longitudinal evacuation. The affected Mission arrived at the Emergency Siding and was inspected by fire fighters and was sent back to the platforms.

97. In addition to Fire and Smoke Detection Systems, there were 9 instances of evacuation of people from the train due to various alarms being activated.

Broken Rails and Broken Welds

98. There were 12 incidents of broken rails and broken welds. 3 incidents of broken rails were identified during planned inspection; 8 incidents were noticed following track circuit failure and the other incident, was identified after the UK Crossover door failed, and was therefore reported to the mechanical and engineering technicians. Corrective maintenance was carried out.

Passing of Closed Markers without Authority (SPAD)

99. There were 6 instances of passing of closed markers (i.e. signals passed at danger – SPADS) without authority. Of these, 4 were related to driver error and 2 were regarded as technical SPADs unrelated to driver behaviour or other operator error. Out of these 6 instances, 5 of the SPADs were by HGV shuttles and the other incident was by a tourist shuttle. The Safety Authority continues to regard non-technical SPADs very seriously and Eurotunnel submits regular feedback on the causes and trends.

Work Related Accidents and Accidents to Passengers and Others

100. Instances of work related accidents and accidents to passengers reported to the Safety Authority under the formal arrangements included the following:

- On 8 February 2004, whilst working in the UK preparation yard, a driver of a Schöma engine drove the vehicle at 20 kph towards a loading ramp that was only 80m away. As the engine was travelling so fast, the engine mounted the platform. The driver suffered a fractured orbital. The investigation by the Safety Authority confirmed the findings of the cross cutting inspection on accident and investigation procedures in respect of deficiencies in awareness of incident reporting arrangements. In addition it identified that risk assessments for yard operations had not considered locomotive movements. There was inadequate monitoring of technicians' locomotive driving competence. Management of resource for configuration of works trains did not have contingency plans for staff absences which could lead to undue pressure on remaining staff to complete work. Eurotunnel has been asked to address the findings of the report and the actions will be followed up in the coming year;

- On 9 March 2004 during the daily sports session at the French Terminal's Fire Equipment Management Centre, a French fire fighter fell backwards, badly hitting his head on the ground and requiring hospitalisation.

Other Potentially Serious Incidents

101. In addition to the above, there were 4 potentially serious incidents, which Eurotunnel reported to the Safety Authority although they fell outside the formal reporting arrangements:

- During May 2003, there were minor accidents relating to the chocking of HGVs, including an event when a subcontractor fell whilst he carried out his duties. Eurotunnel reviewed its loading process and proposed to include specific instructions in the departure conditions for the Chef de Train;

- On September 2003 2 vehicles in the service tunnel collided. The driver of a Peugeot 106 had fallen asleep at the wheel and his vehicle collided with the 2nd car that had a driver and passenger onboard. The three employees of the subcontractor involved in this accident were in charge of maintenance work on the air conditioning system. They sustained no serious injuries. The Safety Authority considered the outcome of Eurotunnel's investigation and identified issues relating to working hours, hours of rest, and the length of time the driver had worked. It asked Eurotunnel to provide further information on arrangements for managing the hours of work and rest for managers and supervisors;

- On 29 December 2003 a subcontractor fell off a stepladder whilst cleaning the signal markers in the running tunnel. After the ladder had been placed on the narrow walkway, the subcontractor lost his balance, fell onto the track and injured his arm. After the investigation, Eurotunnel confirmed that consideration was being given on how to improve the systems of work for cleaning the signal markers and tests were being carried out;

- On 13 and 29 January 2004 there were two similar incidents during the operation of an elevating work platform. On both occasions, the operator had been in front of the machine when the accident happened. His foot was crushed owing to a bad protection of the machine edges. As a result of these incidents, the elevating work platforms are undergoing modifications.

OPERATIONAL SAFETY INSPECTION REGIME

102. The 1986 Treaty of Canterbury places responsibility on the Safety Authority to ensure that the safety measures and practices applicable to the Fixed Link comply with the national or international laws in force, to enforce such laws, to monitor their implementation and to report to the Intergovernmental Commission (Article 11(1)(b)). It also states that for the purpose of carrying out its functions, the Safety Authority may invoke the assistance of the authorities of each Government or any body or expert of its choice (Article 11(6)) and that the two Governments shall grant to the Safety Authority and its members and agents such powers of investigation, inspection and direction as are necessary for the performance of its functions (Article 11(8)). Article 28.1 of the Concession Agreement states that the Concessionaires shall afford access to all parts of the Fixed Link to persons duly authorised by the Intergovernmental Commission or, under its supervision, by the Safety Authority, for the purposes of any of their functions, to inspect the Fixed Link and to investigate any matter relating to its construction or operation and shall afford such persons the facilities necessary for the performance of these functions.

103. The Safety Authority met its inspectors on 8 July 2003 to review the achievement of the Safety Authority's inspection programme for 2002-2003. The outcome of this meeting was made known to the Intergovernmental Commission as part of the report made on the operational safety regime for 2002 - 2003. The report covered all aspects of the safety regime including regular reports on safety received from Eurotunnel, incident reports and specialist reports on specific issues. These include monthly reports on crossover doors, fixed equipment, cleanliness of markers and the operation of trains.

104. On the assessment of achievement for 2002 - 2003 the Safety Authority was able to report that most of the planned inspection programme had been achieved. Some inspections were not completed for various reasons. In some cases particular procedures or equipment that were to have formed the basis for inspection had not been introduced or installed as expected. In other cases planned inspections were postponed to allow inspectors to complete reactive work involving accidents or to follow up more urgent priorities that had not been predicted in the programme of inspection.

105. In general, the inspection programme carried out in 2002-2003 indicated that Eurotunnel was operating to satisfactory safety standards. Issues of particular significance which arose from inspections were pursued by the Safety Authority's working groups as appropriate and are reported on elsewhere in this report.

106. The Safety Authority agreed a Monitoring Plan (see paragraph 31 above) and agreed priorities for inspection based on areas identified by the experts during their analysis work on the Safety Case (see paragraph 32 above).

107. At the end of the period covered by this report, the Safety Authority's annual meeting with its inspectors, at which the assessment of achievement for the full year covered by this report would be discussed, was planned to take place on 18 May 2004. This would provide an opportunity for the Safety Authority to discuss and review with its inspectors the progress and achievement of the Safety Authority's Monitoring Plan.

FUTURE CHALLENGES

European Directives

108. The Safety Authority has continued to consider the implications of European Directives for the current arrangements for safety in the Channel Tunnel established under the Treaty of Canterbury.

Interoperability Directives – The Safety Authority has continued to consider and advise the Intergovernmental Commission on the application of the requirements of the Interoperability Directives to works carried out on the Concession Area. This work is reported on in greater detail at paragraphs 43 – 48 above.

2nd Railway Package including Directive on Safety on the Community's Railways – The Safety Authority considered the impact of the 2nd Railway Package, in particular the Directive on Safety on the Community's Railways, on the missions and working methods of the IGC and the Safety Authority. In particular, the Safety Authority looked at how the existing procedures and practices of the IGC and the Safety Authority would need to be adapted and how the respective roles of all concerned would need to be clarified. At the end of the period covered by this report adoption of the 2nd Railway Package appeared to be imminent and the Intergovernmental Commission was intending to hold a seminar to consider the way ahead.

3rd Railway Package – At the end of the period covered by this report the European Commission had announced a 3rd Railway Package to continue its reforms of the railway sector by opening up the market for international passenger services. During the coming year, the Safety Authority will need to consider the implications of this package for the Tunnel, in particular the proposals for a Directive on the certification of train drivers.

Minimum Operating Requirements (MORs)

109. Towards the end of the year covered by this report, Eurotunnel advised that a review of the MORs had been undertaken and several amendments were proposed. At the request of the Safety Authority, Eurotunnel was developing a standard process to be applied to such intended modifications. This would include a clear description of the justification of the intended change and the anticipated consequences including an appropriate risk analysis.

Classification and Processing of Safety Related Incidents

110. During the course of the year, Eurotunnel discussed with the Safety Authority revision of its arrangements for classifying and processing safety-related events. At the end of the year, this work remained ongoing. The Safety Authority had asked to receive a copy of Eurotunnel's proposed final documentation together with an explanation of Eurotunnel's response to a number of comments made by the Authority.

New Eurotunnel Board

111. At the end of the period covered by this report a special meeting of Eurotunnel's shareholders was about to take place to consider removal from office of all members of the Eurotunnel board of directors and the appointment of a new board. The Safety Authority considered this matter and concluded that it would be necessary to ensure that any change in the Eurotunnel Board did not have an adverse impact on standards of health and safety.

Working Methods of the Safety Authority

112. With the arrival of new Heads of Delegation on both the French and the UK sides, the Safety Authority took the opportunity to review its working methods with a view to ensuring that they remained both effective and efficient. This review was on-going at the end of the period covered by this report.