

THAMESLINK 2000

Proof of Evidence on
how changes in Railway Operations and Planning
relate to and impact on the Thameslink 2000 Scheme

By
Robin Gisby
Director, Operations & Customer Services
Network Rail

NR/3/A1

Town and Country Planning Act 1990
Planning (Listed Buildings and Conservation Areas) Act 1990
Transport and Works Act 1992

Railtrack (Thameslink 2000) Order 1997
Railtrack (Thameslink 2000) (Variation) Order 1999

1. Inquiry into applications by Network Rail for the Thameslink 2000 railway project sites at

11-15 Borough High Street, London SE1
2-4 Bedale Street, London SE1
7 Stoney Street, London SE1
16-26 Borough High Street and 7 Bedale Street, London SE1
Blackfriars Railway Bridge, London EC4
Blackfriars Station North, London EC4
Blackfriars Railway Bridge, London SE1 (includes proposed south bank station entrance)

2. Re-opened inquiry into applications made by Railtrack plc for orders under the Transport and Works Act 1992 and associated applications.

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I.0 INTRODUCTION

I.1 Personal Details and Career History

I.1.1 My name is Robin William Gisby. I am Network Rail's Director, Operations and Customer Service. I have an MA in Engineering Science and a Masters in Business Administration.

I.1.2 I am a chartered engineer and have had 20 years experience in a variety of industries, both in this country and abroad. I am a Member of the Institute of Production Engineers; I hold a Chartered Diploma in Accountancy and Finance and am a Fellow of the Chartered Institute of Transport.

I.1.3 I first worked in Britain's railway industry in the early 1990's when I joined the Charterail development as Managing Director. This was an inter-modal rail freight operator that ran a network of road/rail terminals in the UK and France. In 1997, I moved to Railtrack and took up the post of Director, Freight. I moved on to take responsibility for upgrades to the network including the West Coast Main Line upgrade scheme in 1999 before being appointed Regional Director of Network Rail's London & North East Zone in 2000. I then succeeded Michael Holden as Regional Director for the Southern Region in May 2003.

I.1.4 I became part of the senior team who determined radical changes to the management structure of Network Rail, which was implemented in May 2004. Some of these changes had effects on the management of railway planning and operations, and I intend to describe in my evidence the effects of these changes on Thameslink 2000.

I.2 Current Role and Responsibilities

I.2.1 My present role is that of Director, Operations and Customer Services for Network Rail a role that I have held since May 2004. I am accountable for

management of the Operations and Customer Services organisation, and am responsible for the 8,000 staff who work for me. I report to Iain Coucher, Network Rail's Deputy Chief Executive, who has Board responsibility for all service delivery, maintenance and network performance matters. Janet Goodland gives further details of the organisational structure of Network Rail.

- 1.2.2 The Operations and Customer Services organisation operates the railway day-to-day. It delivers train paths, timetabling and train movements that provide for safe performance and meet the needs of Network Rail's customers. It also operates the 17 largest stations on the network. The organisation manages business relationships with passenger and freight train operators and external commercial stakeholders.
- 1.2.3 During the construction phase and also after implementation of the Thameslink 2000 scheme, I will be accountable within Network Rail for the reliable delivery of train services. By this I mean that I must be personally assured that sufficient infrastructure and management control measures are in place to achieve the demanding levels of punctuality and reliability (defined together as train service performance) agreed by Network Rail and the Office of Rail Regulation (ORR).
- 1.2.4 Members of my Operations and Customers Services team are involved with the development of the Thameslink 2000 scheme at many levels. In my evidence I describe how the continuing development work since the first Inquiry has strengthened the ability of the rail industry to deliver reliable train services both during the construction phase and also after the introduction of the full Thameslink 2000 service.

2.0 PREVIOUS & NEW EVIDENCE

2.1 Reference to Previous Evidence

2.1.1 Michael Holden, my rail industry colleague and predecessor as Director for the Southern Region, provided comprehensive evidence at the first Inquiry on the “Management of Railway Operations, and its Relationship to the Thameslink 2000 Scheme.” [Ref RT/3/A]. The principles underpinning delivery of train services set out by Michael Holden remain materially unchanged and represent Network Rail’s view on the majority of the railway operational matters associated with the Thameslink 2000 scheme.

2.1.2 In his evidence, on “Railway System Management, and its Relationship to the Successful Operation of Thameslink 2000” [Ref RT/14/A], John Ellis supported Michael Holden’s conclusions. I agree with John Ellis in the judgement he expressed in his evidence that getting the right combination of components such as rolling stock, infrastructure and timetables, to provide the complete railway system is critical to successful delivery of the Thameslink 2000 train service. I shall explain what changes have been made to components of the proposed railway system since the first Inquiry and how these have served to improve the ability of the Thameslink 2000 scheme to deliver reliable train services.

2.2 Objectives of New Evidence

2.2.1 My evidence seeks to deal particularly with the operational management aspects of issues raised in the Statement of Matters [CD/176], specifically matters 6 (Alternative Routeing), 8 (London Bridge) and 11 (Significant Changes).

2.3 Structure of Evidence

2.3.1 My evidence is structured in the following manner:

In Chapter 1 I introduce myself and describe the role of the Operations and Customer Services organisation in relation to the Thameslink 2000 scheme;

In Chapter 2 I explain the context and structure of my evidence and its relationship with that given on operational matters to the first Inquiry;

In Chapter 3 I explain how my revised organisational structure functions; the updated process for introducing the Thameslink 2000 train service onto the network; and the application of new line-of-route control arrangements;

In Chapter 4 I address those parts of Annex D Matter 6 (Alternative Routeing) and Matter 8 (London Bridge) insofar as they relate to operational management issues;

In Chapter 5 I address those parts of Annex D Matter 11 (Significant Changes) which relate to operational considerations. This chapter includes evidence about the effects of revisions to the infrastructure design proposals and new techniques which have been introduced to assess the capacity of the network for operating trains;

In Chapter 6 I set out the conclusions I have drawn about the management of railway operational issues and its relationship with the Thameslink 2000 Scheme.

3.0 ORGANISATIONAL RESPONSIBILITIES

3.1 Management Structure for Operations

- 3.1.1 Janet Goodland gives evidence on the Network Rail organisational structure. The regional director organisation referred to in Michael Holden's evidence has been abolished and its responsibilities have been reassigned. A further change has seen the responsibility for day-to-day operation of Network Rail's 17 Managed Stations, which includes London Bridge, transfer into my Operations and Customer Services organisation.
- 3.1.2 The key aims of the Operations and Customer Services organisation are to establish clear responsibility for planning and operating the railway network, and to improve relations with our customers and stakeholders.
- 3.1.3 The organisation is structured around eight primary Routes which cover the entire network. Each Route is the responsibility of a Route Director, who reports directly to me. Some of the geographically larger Routes are sub-divided into Areas under the control of an Area General Manager who reports to the Route Director. Each of the Managed Stations has a nominated Station Manager, including London Bridge, who reports to either the Area General Manager or the Route Director.
- 3.1.4 Figure I comprises of a map showing the Route Director Organisational Structure overlaid on the Thameslink 2000 network.
- 3.1.5 I have a strong headquarters team who are responsible for planning the operation of the network including the activities of timetable compilation, performance planning and incident management through the network control structure.
- 3.1.6 These changes to the Operations and Customer Services Organisation have improved the ability of members of my team and the members of Thameslink Programme Management team to work together. This gives me confidence in Network Rail's ability to develop robust proposals which

will ensure that the Thameslink 2000 train service will be capable of being consistently and reliably delivered.

3.2 Train Service Performance

3.2.1 One of my main responsibilities is the management of performance and promoting initiatives to secure year-on-year improvements. Network Rail has agreed improvement targets with the Office of Rail Regulation as part of the 2003 Access Charges Review [Ref CD/207 Chapter 9]. During 2004/5 the total delay minutes caused by Network Rail reduced by 16% compared with 2003/4; the aim is to achieve a target of 30% reduction in delay minutes by 2008/9. Based on a 10 year projection from 2003/4, a continued reduction in delay minutes is forecast. This assumes that Train Operators will also continue to take action to improve their own performance; something which is in their own interest and which my experience shows me that they are doing. In my view, the improvement targets are very challenging but achievable.

3.2.2 The 2005 Railways Act established Network Rail as a single point of accountability for industry performance. The performance monitoring and reporting which was formerly undertaken by the SRA is now transferred to Network Rail. This change involves more collaboration between Network Rail and the Train Operators to develop and implement initiatives aimed at improving overall performance. Joint Performance Improvement Plans are being developed based on each train operator being identified with a single Network Rail route.

3.2.3 Strategies for ensuring that the performance targets are met, or bettered, must also take account of the effects arising from the introduction of new railway infrastructure and revised train service patterns, such as Thameslink 2000. The current targets will include the early stages of the Thameslink 2000 construction period. New targets will be set beyond 2008/9 and the

effects of the Thameslink 2000 scheme during the later stages of construction and from implementation of the new train service pattern will be factored into considering how the targets will be met. Although there is more work to be done, in my view the enhanced infrastructure to be provided for Thameslink 2000, will make a significant contribution towards achieving existing and future performance targets.

3.2.4 Evidence to the first Inquiry showed how the Thameslink 2000 infrastructure will provide the capability for the restoration of right-time running if service delays and disruption occur. This requirement is met by providing sufficient infrastructure, where practicable, particularly in the busiest areas, to give an alternative route for trains in the event that the normal route becomes unavailable. Computer modelling is being carried out to simulate operation of the Thameslink 2000 timetable over the new infrastructure. The results so far show the proposed infrastructure will have the capability to deliver train services reliably. The addition of an effective management structure, described in section 3.3 of this evidence, to take immediate decisions if normal operation of services is threatened by an incident provides a firm base for operating the best achievable train service under all conditions. In my opinion, the infrastructure being provided as part of Thameslink 2000 combined with operational management procedures will provide a robust and resilient foundation for the operation of Thameslink 2000 and other network train services.

3.3 Integrated Control Arrangements

3.3.1 A programme that is planned for completion during 2006, involves creation of Integrated Control Centres (ICC) for each of the 8 Network Rail Routes. Each ICC will provide the Network Rail operational control, infrastructure fault control and train operator's train running control functions. The aim of an ICC is to deliver effective real time management

of planned and unplanned disruptive events. Every ICC is continually staffed with Network Rail and Train Operating company staff working together co-operatively under a single manager in a joint operation. The key objectives are to shorten the chain of command and the decision-making process, to recognise the primacy of the industry's customers and to deliver improvements in overall railway operating efficiency.

- 3.3.2 Development work will take place to identify and incorporate any additional requirements, to facilitate provision of real time management of the complex Thameslink 2000 train service pattern.

4.0 ANNEX D MATTERS 6 AND 8: UPDATED ASSESSMENT OF THE OPERATIONAL FEASIBILITY OF THE ELEPHANT & CASTLE ALTERNATIVE AND OPERATIONAL VIEW OF THE LONDON BRIDGE MASTERPLAN

4.1 Alternative Routeing via Elephant and Castle (Annex D Matter 6)

4.1.1 The Statement of Matters seeks an updated assessment, in the light of changed circumstances since the first Inquiry, of the feasibility of routeing Thameslink services through Elephant and Castle and Herne Hill stations.

4.1.2 I shall demonstrate that, notwithstanding changes to other train service flows that have or may take place on the Elephant & Castle/Herne Hill route prior to the introduction of Thameslink 2000 services, there has been no material change to the conclusions drawn by the Inspector in his report following the first Inquiry [CD/199]. Jim Steer and Janet Goodland also give evidence on this matter.

4.1.3 I will start by stating that during the peak periods the network in the London Bridge area is already operated to capacity and there is no scope for running additional Thameslink services without the infrastructure enhancements to be provided as part of the Thameslink 2000 scheme. I believe that the opportunity should be taken to relieve critical capacity bottlenecks [See Janet. Goodland's evidence] in the London Bridge area, which have seriously restricted the ability of the railway network to respond to passenger growth demand for many years. The Thameslink 2000 scheme will realise that opportunity to the full.

4.2 Results from an Updated Assessment of the Effects of Routeing Thameslink Services via Elephant and Castle and Herne Hill stations

4.2.1 Since the first Inquiry, it has been decided that all Eurostar international train services will be rerouted into St Pancras following completion of the Channel Tunnel Rail Link high speed route in 2007. As no Eurostar trains will operate into Waterloo some track capacity at Herne Hill will be released. In order to respond to matter 6, I have undertaken an assessment to determine how much of the capacity released by Eurostar might be re-used to route additional Thameslink 2000 services through Herne Hill. The 2004 working timetable was used as the basis for assessment as it reflects the current level of usage of the network in the Herne Hill area before temporary changes to train services to facilitate the blockade of the Thameslink line in connection with CTRL construction work. To understand the sensitivity of the findings to changes in service patterns, an assessment was also made using the timetable which it is planned to operate once the new Intergrated Kent Franchise is in place. I am satisfied that the findings from the assessment are robust and that future timetable changes, which do not significantly affect the number of trains to be run, would give substantially similar results.

4.2.2 Since their commencement in 1994, the Eurostar trains have operated largely on a flighted timing into and out of Waterloo International. That is, two trains depart or arrive only a few minutes apart and then there is generally up to an hour before the next train or trains depart. This practice enables optimum use to be made of capacity on the approaches to London Waterloo, and requires that London bound and Paris/Brussels bound trains are timed to pass at largely the same time in the Herne Hill area. Similarly, current Thameslink services, approaching Herne Hill from both the Elephant and Castle and Tulse Hill directions are generally timed to pass through the junctions at Herne Hill at the same time. By so timing

trains to pass each other at this bottleneck in the system makes the best use of the available infrastructure. Loss of access on either route corridor at Herne Hill is therefore minimised and maximum use can be made of the network.

4.2.3 The theoretical availability of a train path through the junctions at Herne Hill alone does not indicate whether a Thameslink 2000 service could be rerouted. In his evidence, Michael Holden explained how the Development Timetable [See RT/3/A section 3.3 and appendix RT/3/B/2] has been constructed around the need to time trains both to and from London Bridge and the Elephant and Castle routes in parallel over Blackfriars Junction. He further described the critical relationship between the timing of trains over Blackfriars junction and Herne Hill junction [refer to section 3.3.17]. Put simply, the timing of Thameslink 2000 trains over Blackfriars is fixed and therefore the timing of these trains over Herne Hill junction is also fixed. It follows that the vacant train paths at Herne Hill must be at times to match with timings onward or backward from Blackfriars junction. To protect the parallel working at Blackfriars, and therefore the 24tph peak service through the core with regularly timed services across the network, both a north and a southbound Thameslink 2000 train would need to be re-routed from the London Bridge to the Herne Hill route.

4.2.4 Based on the principles set out in the preceding section I have concluded that:

- a) During the morning peak hour, only a total of 4 peak hour paths exist at Herne Hill in either a northbound or southbound direction are released by rerouteing Eurostar services to St. Pancras.
- b) There are no combinations of northbound and southbound paths available to achieve a parallel move through Herne Hill junction. Use of a single direction path is inefficient and will result in a net

reduction in network capacity and a reduction in the number of services that can run.

- c) There is therefore no extra capacity for additional Thameslink 2000 services to be routed through Herne Hill during the peak period.
- d) During the off peak period when the Thameslink 2000 service drops to 18tph, there could be 2 single direction and 2 both direction paths per hour available at Herne Hill.
- e) Reconsideration of the train service specification would be required to ensure that any diversion of trains from London Bridge follows a logical pattern.

4.2.5 I also considered, in order to resolve the question, whether the changes to the train service pattern being planned as part of the new Integrated Kent Franchise (IKF) might also have a material effect on the line capacity at Herne Hill. In fact, the number of trains which the new franchisee will be asked to operate is virtually identical to today's service, and no additional capacity will be released for Thameslink 2000 services.

4.2.6 In summary I must stress that it is only possible to avoid the proposed Thameslink 2000 works in the London Bridge/Borough Viaduct area if **no** peak Thameslink 2000 service is to serve London Bridge. Provision of the capacity needed to divert all 18 Thameslink 2000 trains per hour, currently planned to pass through London Bridge, to run via the Herne Hill route would require the enhanced infrastructure described at the first Inquiry. [See RT/202/A and CD/133].

4.2.7 In conclusion, I will re-state that the network through London Bridge is already operating close to capacity during the peak periods. To enable me to plan and operate a train service that will meet the forecast demand in the London Bridge area requires the additional infrastructure planned as part of

the Thameslink 2000 scheme. Provision of substantial additional infrastructure on the Herne Hill route provides capacity on the network in excess of that needed.

4.3 London Bridge (Annex D Matter 8)

4.3.1 Janet Goodland gives evidence on the background which led to adoption of the London Bridge Masterplan as part of Thameslink 2000 and Chris Bennie gives evidence on the design proposals. In section 5 of his evidence, Jim Steer gives details the numbers of passengers forecast to board and alight from trains at London Bridge during the morning peak and describes the benefits that the Masterplan design brings. I give evidence on the operational and passenger management benefits that the new station will provide.

4.3.2 Approximately 80,000 passengers use London Bridge station during the morning peak period and during this time it operates near to capacity. Managing the huge numbers involved presents a considerable challenge to the staff operating the station. Passengers need to be able to use the station safely, in comfort and to reach their destination whether that is the platform, underground, bus or street reasonably quickly. Today, movements around the station are rarely quick and are sometimes uncomfortable. Overcrowding is regularly experienced on the over bridge, in the subways and on the platforms. Achieving timely despatch of trains is challenging because of the numbers of passengers who board and alight particularly at peak times.

4.3.3 In my opinion, the London Bridge station Masterplan design addresses all the current operational constraints. The new concourse, improved circulation and dispersal arrangements will add much needed additional capacity and substantially improve the experience for passengers. Provision of additional platform capacity will reduce crowding levels and will contribute to ensuring trains depart at their booked time.

5.0 ANNEX D MATTER 11: SIGNIFICANT CHANGES IN CIRCUMSTANCES SINCE FIRST INQUIRY

5.1 Overview of Changes

5.1.1 Michael Holden described the range of parameters that were taken into account to produce the sample peak and off peak Thameslink 2000 timetables [see RT/3/B/2]. These parameters have not changed materially.

5.1.2 There have since been developments in the processes applied to ensure that optimum use is made of the rail network. I will explain how these processes are applied and their future use to accommodate Thameslink 2000 services. A number of significant improvements to the proposed designs have been made. I will explain how these improvements will further contribute towards reliable delivery of the Thameslink 2000 train service. Janet Goodland also gives evidence on changes in circumstances.

5.2 Timetable Compilation and Operability

5.2.1 I am responsible for ensuring that timetables are developed that will fulfil service requirements, make most efficient use of the network and comply with the relevant compilation requirements, necessary to ensure that a consistently reliable train service is achieved.

5.2.2 Production of timetables is governed by rules set out in Network Rail's *Rules of The Plan*. These rules include for example the length of time a train is to be given to travel over each part of a route, the amount of time to be allowed between successive trains and the length of train that may be operated. The rules are applicable to bids for scheduling of train paths on the Network Rail network. The contents of the rules are determined by Network Rail through both informal and formal rail industry consultation with the primary aim of achieving the optimal balance between access to

the network for train operations and performance robustness of the resulting train plan.

5.2.3 Proposed timetable changes are initially checked by my team for compliance with the *Rules of The Plan* and an assessment is made as to whether the existing network can accommodate the change. Constraints are also identified and a response with recommended modifications to the proposed timetable change is produced. These recommendations then provide a basis to agree modifications to the proposed timetable change which are ultimately included in the published timetable.

5.2.4 Michael Holden's evidence gave full details of the process applied to compilation of a working timetable [RT/3/A section 3.3 & RT/3/B/2]. The sample "typical hour" Thameslink 2000 timetable used in Michael Holden's evidence remains essentially valid, and of relevance today, in that it demonstrates by illustration how 24 trains per hour can be planned and effectively and sustainably operated. Figure 2 of my evidence shows pictorially the composition of the 24tph train service by route.

5.2.5 This illustrative timetable demonstrates inner area capability. It will need further development when or if any changes to the Thameslink 2000 service specification or to services with which it must interact are finalised by the Department for Transport as successors to the SRA.

5.3 Route Utilisation Strategies

5.3.1 References were made by Michael Holden in his evidence [RT/3/A section 2.2] to the Railtrack Network Management Statement [CD/46] and Account Plans. These have been replaced by the Capacity Utilisation Policy, led by the SRA and described by Jim Steer [refer to section 6.9]. This policy has been implemented by commencing a programme of Route Utilisation Strategies.

5.3.2 Changes brought about by the Railways Act (2005) give Network Rail responsibility for leading the development of Route Utilisation Strategies (RUS) on behalf of the rail industry. Each RUS will demonstrate how passenger and freight demand can be balanced with operational performance and cost to address the reasonable requirements of the Department for Transport (or the Scottish Executive) and other stakeholders. Network Rail will use the RUS process to inform the company's business planning process and set priorities for timetabling, infrastructure maintenance and renewals.

5.3.3 The SRA initiated RUS work which includes parts of the Thameslink 2000 network. The Midland Main Line/East Midlands RUS has been concluded and some changes were introduced with the June 2005 timetable update; others will follow with the main timetable change in December 2005. Currently, the Brighton Main Line and East Coast Main Line RUSs are still in the consultation stage. Once a strategy is agreed, my team will use the outputs to inform the development and delivery of future timetables.

5.3.4 I would like to make it clear that the intention of those RUSs, that include the future Thameslink 2000 routes, is to maximise the use of the existing infrastructure prior to the implementation of enhanced infrastructure and new service specifications. The RUS process complements but does not replace the need to promote schemes to substantially increase network capacity.

5.4 Re-franchising Passenger Service Operations

5.4.1 At the time of the first Inquiry, most of the passenger train service franchises had a number of years to run. Changes to the franchising structure have since been introduced by the SRA and my team has become involved where these changes also modify the train service that a current or future franchisee is to deliver. The role of my team is to translate changes in train service specifications into operable timetables.

Responsibility for the re-franchising work which is closely related to the RUS work, transferred from the SRA to the DfT in July 2005.

- 5.4.2 Jim Steer gives evidence about the strategy for franchise replacement. My team have been working with the SRA to maximise use of the existing network particularly during peak hours. Once the next round of changes to train services have been made, I do not anticipate there will be much potential for creating additional train capacity over certain sections of route during the peak times. Future train service improvements, including Thameslink 2000, will require the provision of additional infrastructure.
- 5.4.3 The Department for Transport will in due course provide Network Rail with a train service specification that will include both Thameslink 2000 and all related passenger train services. This is likely to occur later in the term of the next franchises, probably around 2010 which will give my organisation two years to develop a revised timetable that includes the Thameslink 2000 service.
- 5.4.4 The next generation of franchises already include two that relate directly to Thameslink 2000. These are the Integrated Kent franchise which is due to be implemented in December 2005 and the Thameslink / Great Northern franchise, which should become operational from 1 April 2006. Both the planned franchises make provision for the construction and implementation of Thameslink 2000. The Thameslink/Great Northern franchise combines under a single franchisee many of the existing services that will become part of the Thameslink 2000 service.
- 5.4.5 Southern train operating company operates services throughout most of Sussex, parts of Surrey, Kent and South London. Their franchise runs to the end of 2009. I expect the new franchise to make provision for operation of services, currently operated by Southern but which would form part of the Thameslink 2000 service, to be taken over by the Thameslink/GN franchise operator.

5.4.6 The involvement of my team in developing the Thameslink 2000 infrastructure gives me confidence that the new infrastructure will be flexible enough to accommodate Thameslink 2000 services and changes to other train service patterns for many years to come.

5.5 Railway Operation during Construction and Implementation

5.5.1 Janet Goodland gives evidence about the assumed construction strategy and the duration of the works. My team will continue its involvement with development of the construction strategy. The objective is to deliver the levels of passenger capacity to be agreed with the DfT and the rail industry over the reduced amount of infrastructure that will be available during construction.

5.5.2 Rigorous rail industry procedures exist to protect the interests of our customers and passengers. These include wide ranging consultation on our proposals and providing sufficient advance notice of planned train service changes to enable publicity to be issued to inform passengers

5.5.3 Separate procedures apply to the necessary closures of parts of the network to facilitate the delivery of Thameslink 2000. Section 5 of Janet Goodland's evidence deals with this subject in more detail.

5.6 Representations by EWS

5.6.1 English, Welsh and Scottish Railway Limited (EWS) presented evidence to the first Inquiry, and has subsequently been involved in discussions with the aim of resolving its concerns and providing assurances primarily relating to the future capability of the network to operate freight services.

5.6.2 Network Rail has responded to the points made by EWS in its representation to the Secretary of State on 17 February 2005. No response has been received.

5.6.3 In my view, the Thameslink 2000 scheme is not prejudicial to the rail freight industry, and any concerns should be fully addressed through application of the rail industry consultation procedures involving all affected train operators. The TWA process does not provide the vehicle to address rail industry contractual matters.

5.7 Rolling Stock

5.7.1 Jim Steer gives evidence on the passenger carrying capacity of the proposed Thameslink 2000 rolling stock. I will explain how changes to the specification from that advised to the first Inquiry will improve on the ability to deliver the Thameslink 2000 service.

5.7.2 In his evidence to the first Inquiry, Michael Holden explained [RT/3/A] the relationship between rolling stock design, railway infrastructure and the timetable and described how these elements are brought together to deliver the Thameslink 2000 train service. Michael Holden's evidence remains applicable today but there have been changes to the specification of the rolling stock to be used on Thameslink 2000 services. At the first Inquiry, the types of rolling stock were defined as the class 319 stock used on Thameslink services today; existing class 365 stock converted to dual voltage operation and other rolling stock no more demanding of the infrastructure than classes 319 or 365. It was assumed that 127 existing 4 car units would be available, and that a further approximately 200 units would require to be manufactured.

5.7.3 In 2002, the SRA informed Network Rail that they now intended to introduce a standardised purpose built fleet of 330 new 4 car units to

operate the Thameslink 2000 service. The new specification includes improved acceleration, braking and passenger access/egress characteristics. A computer simulation, referred to in section 3.2.4, including the characteristics of the new stock, has been undertaken to test the benefits expected to be achieved. In conjunction with improvements to the signalling system described in section 5.8, the results show that use of the new rolling stock makes a significant contribution to the reliable operation of the 24tph Thameslink 2000 train service through the core section of the route.

5.7.4 Opportunity is being taken to gather experience from the operation of the new types of rolling stock that are now rapidly replacing the Mark I slam door trains. In particular the effects of operating trains with wider doorways and a different mix of seated versus standing passengers is guiding the thinking about how most effectively to manage dwell times at stations. Providing passengers with trains that allow them to board and alight quickly combined with effective platform management increases the robustness of the train service.

5.7.5 A sign of how the DfT proposes to deliver major projects in future involves Network Rail taking a much greater role in the specification of rolling stock, including that required for Thameslink 2000. This development is significant because it provides Network Rail with the ability to influence a critical element of the Thameslink 2000 railway system design. In particular it will help ensure the rolling stock design specification will, in conjunction with the new infrastructure, meet the performance and passenger handling capabilities required by the Thameslink 2000 scheme.

5.8 Signalling

- 5.8.1 The four aspect core area signalling system described at the first inquiry was demonstrably capable of delivering the 24tph service. However to consistently deliver this level of service required both a substantial amount of infrastructure and consistent operation of different types of train at close to the maximum of their acceleration and braking capabilities. The decision to operate a standardised fleet of rolling stock with superior acceleration and braking characteristics has removed a major constraint and enables a simpler signalling solution to be adopted.
- 5.8.2 It has been jointly decided between Network Rail, the existing Thameslink train operator and HM Railway Inspectorate that the lineside signalling in the core area between Blackfriars and St. Pancras will now be three-aspect rather than a four-aspect system. This decision will still provide a 2 minute headway which allows trains to be timed to reliably run at 2½ minute intervals. There are significant benefits from adoption of the revised proposal. In my opinion the change to the signalling system combined with using completely new rolling stock materially improves the means of delivering the train service.
- 5.8.3 A further change involves the signal interlocking system selected to operate the signals which was to be based on new computer based technology, known as CBI (computer based interlocking). This is proving difficult to adapt to UK standards and practices, and only relatively small schemes using CBI have been implemented so far. Network Rail will progressively increase its confidence in the commissioning and reliable operation of CBI through application of the technology to progressively more complicated areas. This approach allows the technology to mature but does mean that it is too soon to consider using CBI at London Bridge which is one of the most complicated signalling installations on the network. Instead, the proven solid-state system, known as SSI (solid state interlocking) will be used. This

system has been used extensively throughout the UK and overseas can be applied to an area as complicated as London Bridge with the confidence that it will facilitate efficient train service delivery.

5.8.4 Network Rail is involved in the early stages of development of the European Rail Traffic Management System (ERTMS) signalling technology. It is too early to consider whether it would be appropriate to use this technology on the Thameslink 2000 network. The Thameslink 2000 development team are alert to the current status of the ERTMS project and will maintain an awareness of developments. The latest version of SSI, which is likely to be used for Thameslink 2000, is capable of being upgraded to accommodate, for example, the European Railway Traffic Management System which is under development.

5.8.5 In conclusion the changes made to the signalling scheme proposals are beneficial both in the ability to deliver the Thameslink 2000 service and to enable further upgrading to take place in the future.

5.9 Changeover from DC Third Rail to AC Overhead Line Equipment (OLE) and vice versa

5.9.1 Currently a train which fails to change to the DC traction power supply at Farringdon can be diverted to Moorgate from where it will return north using the AC traction supply. For trains which fail to change to AC traction supply, the track layout at Farringdon allows the train to run back towards the Blackfriars direction. This occurs on average about once a month with the most likely fault mode being a failure to change from DC to AC traction power supply. However, the reconstruction of Farringdon station will require removal of the trackwork which is used in the event that a train fails to changeover its traction supply source. At the time of the first Inquiry it was proposed that the changeover point should be moved to Blackfriars, and that, as a consequence, the AC OLE equipment should be

extended to Blackfriars Junction where trackwork would be available to deal with defective trains.

5.9.2 During the development of technical design proposals following the first Inquiry, it became clear that an extremely complicated DC electrical switching arrangement would need to be installed in the Blackfriars area to cope with the number of running lines that would have to be separated electrically.

5.9.3 It also became clear that there were significant potential effects on the signalling system over a wide area of the DC electrified routes from Blackfriars southwards to the London Bridge, Cannon Street and Charing Cross areas. To mitigate the effects of stray AC traction current it would not only have been necessary to carry out extensive immunisation work but more of the existing signalling would have had to be brought up to the latest standards. Much of that signalling would not otherwise have needed to be renewed for around 10 years at least. Inclusion of this work would have increased the scope of the scheme and have prolonged the construction period. The benefits of maintaining the earlier proposal for the AC/DC changeover were far outweighed by the disbenefits.

5.9.4 A simpler solution was sought which achieves the same operational requirements as the earlier proposal. Put simply, an effective way is needed to recover trains that fail to make the changeover between traction sources. It is now proposed that the changeover point for AC overhead supply to DC third rail will continue to take place at Farringdon but the DC to AC changeover for northbound trains, at City Thameslink. New trackwork between Farringdon and City Thameslink will facilitate recovery of trains which fail to make the changeover. It is intended that trains which fail to change to AC power will return south on DC power and vice versa for trains which fail to change to DC power. The existing Smithfield sidings will be used when required for defective trains of up to 8 car length.

- 5.9.5 The revised technical solution provides a better level of operational flexibility and passenger handling capability than the original proposal. Provision of dual AC OLE and DC third rail and new trackwork between Farringdon and City Thameslink will provide effective contingency arrangements to deal with failed trains and restore normal train services as quickly as possible.
- 5.9.6 For both north and southbound trains which fail to make the traction changeover and therefore cannot continue their scheduled journey, a contingency plan would be put in place. This will require passengers to be detrained at the City Thameslink station which has sufficiently wide platforms to deal with a short term influx of passengers off a defective train.

6.0 CONCLUSIONS

- 6.1 I am accountable within Network Rail and therefore to its customers for the reliable delivery of train services. I am therefore competent to judge the extent to which the Thameslink 2000 scheme introduces additional capacity on to the network to alleviate existing bottlenecks and whether the planned train service is capable of being reliably delivered.
- 6.2 In my evidence, I have specifically reviewed Matters 6, 8 and 11 set out in the Statement of Matters from the operational perspective. I am satisfied that the changes to the scope of the Thameslink 2000 scheme have materially improved the ability of the proposals to reliably and consistently deliver the specified train service.
- 6.3 The small changes to network capability which will arise from rerouting the Eurostar service will not materially change the conclusions reached by the Inspector following the first Inquiry about the Elephant & Castle and Herne Hill alternative. The argument in favour of upgrading the London Bridge route to increase capacity by easing long-standing bottlenecks in the railway system remains compelling.

FIGURE 2

Thameslink 2000 Train Service by Route

