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NOISE AND THE CHANNEL TUNNEL RAIL LINK

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1. INTRODUCTION

This paper describes the response of the local authorities affected by the proposed Channel Tunnel Rail Link. It outlines

- the organisational structures that have evolved to enable the Kent authorities to adopt a co-ordinated approach to British Rail's (and now Eurorail's) proposals
- the local authority's perception of the noise implications of the proposals
- the criteria and standards that have been adopted by the Kent local authorities in relation to noise.

2. THE NEED FOR A RAIL LINK

There is little doubt that the proposal for a new link from London to the Channel Tunnel has caused more controversy than the rather more fundamental decision to build a fixed link between the UK and France. The Government-sponsored proposal of the early 1970s foundered for lack of public finance and uproar in Kent over the planned high speed rail link running alongside the existing line through Tonbridge/Ashford/Folkestone. By the time the Act [1] that authorised the construction of the tunnel was before Parliament British Rail was firmly of the view that there would be no early need for a new rail link because the additional traffic generated by the tunnel could be accommodated on the existing network.

By July 1988 revised traffic forecasts led British Rail to the conclusion that a new link would be needed within 7-10 years of the tunnel opening and 4 alternative route options were put forward [2].

3. THE LOCAL AUTHORITY RESPONSE

The first issue facing us was to be satisfied that there was a need for a new line through Kent. The County Council therefore commissioned an independent assessment of the various traffic forecasts and existing route capacities [3] which confirmed British Rail's conclusion that a new line would be required. The local authorities affected by the route options quickly saw the need to work together to avoid unnecessary duplication of effort and to ensure a co-ordinated response which nevertheless allowed

individual authorities to have regard to particular local circumstances. Nowhere was the need for consistency of approach greater than on the noise issue. A complex structure has evolved to ensure co-ordination of the political, technical and community response.

On the noise front environmental health officers, planners, engineers and consultants formed a specialist study group which feeds into the co-ordinating technical group.

The immediate need was for basic information to enable us to judge the extent to which noise was an issue. We were dealing with a new phenomenon: no new main-line railways have been built in the UK for nearly 100 years. Furthermorethere is no national standard on acceptable levels of railway noise - advice was promised in circular 10/73 [4] and is still awaited! It was therefore natural to look to the experience in other countries - particularly France and West Germany - where high speed railways are in existence.

4. THE FRENCH EXPERIENCE

The TGV Sud-Est linking Paris and Lyon was opened in 1981 and has no acoustic protection built in. The newer high speed lines (Atlantique, Nord and Interconnexion) are required to meet a noise standard which is related to the pre-existing background noise level. On the Atlantique line, the first section of which opened in September 1989 and which will eventually link Paris and Bordeaux, a range of environmental protection measures have been incorporated including

- routeing alongside existing transport corridors
- tunnels
- cut and cover/box enclosures
- cuttings
- barriers

5. THE KENT CRITERIA

In the light of the information gained from the best practice in other countries which have built or are planning high speed lines, the Kent local authorities have adopted a comprehensive set of environmental protection criteria against which to judge the proposal for a new link [5]. Those criteria relevant to noise are:-

1. use of existing transport corridors (both rail and road) where that can be shown to minimise land take, severance and environmental and noise intrusion;

2. avoidance of built development as far as possible where new rail tracks are constructed outside present BR operational land;
3. construction of rail tracks on lengthy embankments to be avoided to minimise noise and visual intrusion;
4. design of cuttings, tunnels, cut and cover, screening embankments and acoustic walls to minimise visual and noise intrusion;
5. protection of communities and the environment from noise intrusion to be planned to the highest modern standards, which take account of the special characteristics and intrusion of railway noise within parameters related to receiver sensitivity and measured over a period bearing a direct relationship to the actual period of operation of the route and with special consideration being given to overnight operations;
6. noise protection to be achieved wherever possible at source by the incorporation of the highest engineering standards in motive power units, rolling stock, the design and construction of tracks, power distribution systems, structures and trackside equipment rather than the insulation of individual properties;
7. to design for operating speeds which enable commuter use of new tracks and permit maximum practical flexibility in vertical and horizontal alignments so as to minimise property loss, environmental damage and noise intrusion;
8. fair, flexible and comprehensive compensation to be speedily settled for affected property, whether for impact from land take, noise or visual intrusion and to include property affected by increased use of existing tracks;

6. THE KENT NOISE STANDARD

At the time of the announcement of its preferred route in March 1989, British Rail gave details of its noise policy. It proposes a compensation standard of 70 LAeq (24 hour). The local authorities in Kent consider that is unsatisfactory, both in relation to the noise level and the time period. In the light of

- practice in other countries
- research on response to noise
- planning policies in the UK
- planning appeal decisions

Kent has adopted the following standard [6]:-

Compensatory action must be taken by British Rail/Eurorail if the following noise levels are achieved for any time band.

Daytime	(0700-1900)	65 LAeq
Evening	(1900-2300)	60 LAeq
Night time	(2300-0700)	55 LAeq
Maximum noise level	(2300-0700)	80 LAmax

An offer of purchase of property should be made at these noise levels and additionally sound insulation should be provided for any residential property so exposed.

7. CONCLUSIONS

The proposal for a new rail link has given rise to great public concern and hostility - noise has featured high on the list of anxieties. Kent considers British Rail's present noise policy to be inadequate and will be pursuing its alternative through all available avenues including the Parliamentary Select Committee that will consider British Rail/Eurorail's final proposals.

8. REFERENCES

1. Channel Tunnel Act 1987
2. Channel Tunnel Train Services - BR Study Report on Long-Term Route and Terminal Capacity July 1988.
3. Independent Assessment of Rail Services in Kent between London and the Channel Tunnel . Steer Davis & Cleve Limited/Maunsell - January 1989.
4. Planning and Noise - Circular 10/73. Dept. of the Environment 1973.
5. The International Rail Link. Kent County Council - Making sure that BR and Eurorail get it right. Volume V. January 1990.
6. Railway Noise Standards - Let's Get Them Right. Kent County Council and Technica Indecon Limited. Technical Document 1373/RPT/1 February 1990.