



Report C3/3

Demand Modelling Proposals

Prepared for Rail Research UK
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Project C3: Role of Rail in Integrated Transport Policies

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Abstract

This report is prepared as part of the RRUk project ‘The Role of Rail in Integrated Transport Policies’. This project seeks to shed light on the appropriateness of the alternative future rail strategies presented in RRUk Report C3/2 ‘Rail/Road Strategies and External Scenarios’ by modelling their impacts. The report sets out the requirements for the modelling framework and reviews the suitability of existing rail demand models to the task. For passenger traffic these included:

- The Passenger Demand Forecasting Handbook (PDFH);
- The Framework Model (RIFF);
- MOIRA;
- The Lythgoe Model;
- PRAISE;
- The National Rail Model; and
- PLANET.

And for freight traffic these included:

- GB Freight Model (GBFM) (MDS Transmodal);
- EUNET Model (TransPennine Model);
- SKM ‘Additional Freight Model’;
- SRA Freight Interchange (CAST-DPM) Model; and
- The LEFT model.

For the passenger sector, a new model is proposed which brings together the relative strengths of the aggregate direct demand models (PDFH, RIFF, MOIRA and the Lythgoe Model) where the vast majority of rail demand research has been undertaken. For the freight sector, two models are selected. The LEFT model, currently under development at ITS, looks very suitable for the work in this project, but it needs further development and testing. As a more well established alternative, and for more details policy tests, the GBFM model is recommended. This is available to ITS for research purposes.

1 Introduction

This report has been prepared as part of the RRUk project 'Role of Rail in Integrated Transport Policy'. This project seeks to shed light on the appropriateness of alternative future rail strategies by modelling their impacts. The objectives of Project C3 are to:

- (a) Identify alternative aspirations for the future of rail in an integrated transport policy;
- (b) Understand capabilities of existing models to forecast such changes;
- (c) Identify appropriate model developments for this purpose;
- (d) Enhance existing models to enable appraisal of alternative aspirations; and
- (e) To consider the implications of the appraisal results for future rail research needs.

It is the aim of this report to address objectives (b) and (c) by undertaking a review of the rail demand models currently used in Britain to assess how they may be adapted to help answer the policy questions relevant to this project. Objective (a) is covered in RRUk Report C3/2 and objectives (d) and (e) will be addressed in the second and third years of the project. The report deals first with passenger modelling and then freight.