This is a repository copy of *Training Requirements to Enable Transport Planners, Engineers and Operators to Respond to the Challenge of Legislative Change*.

White Rose Research Online URL for this paper:
http://eprints.whiterose.ac.uk/2322/

---

**Monograph:**

Working Paper 234

---

**Reuse**
Unless indicated otherwise, fulltext items are protected by copyright with all rights reserved. The copyright exception in section 29 of the Copyright, Designs and Patents Act 1988 allows the making of a single copy solely for the purpose of non-commercial research or private study within the limits of fair dealing. The publisher or other rights-holder may allow further reproduction and re-use of this version - refer to the White Rose Research Online record for this item. Where records identify the publisher as the copyright holder, users can verify any specific terms of use on the publisher’s website.

**Takedown**
If you consider content in White Rose Research Online to be in breach of UK law, please notify us by emailing eprints@whiterose.ac.uk including the URL of the record and the reason for the withdrawal request.
This is an ITS Working Paper produced and published by the University of Leeds. ITS Working Papers are intended to provide information and encourage discussion on a topic in advance of formal publication. They represent only the views of the authors, and do not necessarily reflect the views or approval of the sponsors.

White Rose Repository URL for this paper:
http://eprints.whiterose.ac.uk/2322/

Published paper
TRAINING REQUIREMENTS TO ENABLE TRANSPORT PLANNERS, ENGINEERS AND OPERATORS TO RESPOND TO THE CHALLENGE OF LEGISLATIVE CHANGE

I G Turvey
CONTENTS

1. ABSTRACT

2. OBJECTIVES

3. BACKGROUND

4. COLLABORATIVE MECHANISMS

5. INFORMATION GATHERING
   (A) Training Needs
   (B) Training Provision
   (C) Other Information Sources
   (D) Dissemination of Results

6. FINDINGS OF THE PROJECT
   (A) Bus Industry Contacts
   (B) Local Government/Consultants
   (C) Constraints

7. TRAINING NEEDS AND PROVISION
   (1) Deregulation
   (2) Transport Policies and Programmes
   (3) Other PICKUP Initiatives

8. ASSESSMENT OF THE LOCAL COLLABORATIVE PROJECT (L.C.P.)

APPENDIX 1 Further Reading
APPENDIX 2 Current ITS Short Course Programme
APPENDIX 3 Questionnaire/Interview Format
APPENDIX 4 Types of Short Courses Nationally
APPENDIX 5 PICKUP Contacts - National Providers
                             - Local Employers
ABSTRACT

I G TURVEY (1987) Training Requirements to enable transport planners, engineers and operators to respond to the challenge of legislative change, Working Paper 234, Institute for Transport Studies, University of Leeds

This Working Paper forms the basis of the Final Report submitted to the Manpower Services Commission at the conclusion of an I.T.S. study into how the training requirements of transport professionals in the Yorkshire and Humberside region, may change as a result of the 1985 Transport Act and the 1985 Local Government Act. The project formed part of the Department of Education and Science PICKUP PROGRAM (Professional, Industrial and Commercial Updating) and covered the period 1 October 1985 to 30 November 1986.

The University personnel involved in the project were:

Project Director: Mr. T.D. Bilham, MA (Cantab).
Director of Continuing Education,
Dept. of Adult and Continuing Education,
University of Leeds, Leeds LS2 9JT.

Project Co-ordinator: A.D. May, MA (Cantab) CEng, MICE, MIHT, FCIT.
Professor of Transport Engineering,
Institute for Transport Studies,
University of Leeds, Leeds LS2 9JT.

Project Officer: Mr. I.G. Turvey, BSc, MSc, MCIT.
Research Fellow,
Institute for Transport Studies,
University of Leeds, Leeds LS2 9JT.
2. **Objectives**

The project was designed to:

1) Identify the training needs arising from current legislative changes which have substantially altered the responsibilities for transport policy and operation. The legislative changes are:

   - The Transport Act, 1985 which resulted in the deregulation of the bus industry in October, 1986;
   - The Local Government Act, 1985 which led to the abolition of the metropolitan county councils in April 1986.

2) Increase the awareness of target groups of employers of the need for updating and to ensure that they are aware of current training provision.

3) Encourage the University and the providers to react positively to expressed unsatisfied demand for updating/new training.

The target groups envisaged were:

i) the 9 Metropolitan Districts in West and South Yorkshire

ii) local civil engineering and transport consultants who could be expected to work for the Districts;

iii) existing public transport operators such as the Passenger Transport Executives, new operators stemming from the privatisation of N.B.C., and other new operators attracted into the industry, within the Yorkshire and Humberside region.

These objectives remained unmodified throughout the duration of the project.
3. Background

The Local Government Act, 1985 abolished the Metropolitan County Councils and transferred all their responsibilities for highways and traffic to the Districts. The way in which successor authorities would execute their responsibilities was unclear because of the opportunities provided for establishing joint teams, but it was clear that the Districts would be taking over some functions of which they had limited experience, and increasing their involvement in others. While some of the necessary skills would be provided by the transfer of county staff, many existing District staff were likely to require training in new skills. It was envisaged that action would be needed urgently if reorganisation was to take place efficiently from April 1986, and that District teams would have little time to prepare training programmes before that time. No special provisions had been made in the Act for the costs of such preparation and training.

It seemed likely that several Districts would wish to call on consultants to overcome peaks in workload or to provide specialist services. Several local firms of consultants were expressing interest in expanding into this area, and would be needing to review their training requirements.

The Transport Act, 1985 gave rise to a rather different set of new training needs. By introducing competition for public transport it was expected to introduce some new entrants to the business who would require training in the techniques of scheduled bus service operation. It would also require existing operators to develop new skills and procedures in identifying commercially viable services, and in tendering for subsidised services. In addition existing municipal operators were to be restructured as companies at arm's length from their political authorities; this would give rise to substantial new requirements in management. Finally it would change the nature of the local authority's responsibilities; staff there would need to determine the needs for selective subsidy and to develop skills in preparing tender specifications, and some metropolitan districts might wish to become more directly concerned in public transport operation. For commercial reasons these new skills would also be needed urgently, and there was little time for the employers concerned to plan their training requirements.

These two developments could have been treated separately as freestanding training requirements. However, it seemed appropriate to plan them together for three reasons. Firstly, an important group of employers, the Metropolitan Districts, is affected by both; secondly, some of the needs, particularly in the fields of data analysis, forecasting and policy development, are common to both; and thirdly, the Institute for Transport Studies is actively involved in research and teaching in both areas.

Information on the Local Collaborative Project (L.C.P.) programme was provided by the Manpower Services Commission.
(M.S.C.)/Department of Education and Science (D.E.S.) to the Department of Adult and Continuing Education, The University of Leeds, who sought expressions of interest within the University. An L.C.P. brings together local employers, education and training specialists, as well as professional associations, to provide training solutions to skill shortages and update existing skills.

This specific proposal arose from discussions in the regular four-monthly Short Courses Committee of the Institute for Transport Studies, which the Director of Continuing Education attends. This Committee was established as the result of an earlier, university-funded, training initiative, which led to the establishment of the Institute's current programme of short courses (see Appendix 2). It was the realisation that the market for, and required content of, these courses could be substantially changed by the new legislation which led to the proposal for an L.C.P..

Initial discussions with M.S.C./D.E.S. led to the submission of a proposal, prepared by Professor A.D. May, as Chairman of the Institute's Short Courses Committee. Unfortunately, due to a misunderstanding arising from these initial discussions, the proposal formulated was given a national as well as a local perspective, so that it could focus on the full range of organisations affected by the new legislation. As a result the original proposal was rejected at national level, and a revised, successful, proposal was formulated which focused specifically on Yorkshire and Humberside.
4. **Collaborative Mechanisms**

In the formative stage of the project, expressions of support were obtained from the three groups of employer identified in section 2. In addition approaches were made to two other groups of organisation involved in professional training: professional institutions and course providers. Among the first group all three of the most directly relevant institutions: The Institution of Civil Engineers (I.C.E.), The Institution of Highways and Transportation (I.H.T.) and the Chartered Institute of Transport (C.I.T.) expressed support for the proposal. Among the second, the Local Government Training Board, Bus and Coach Council Training Ltd. and PTRC Education and Research Services Ltd. all expressed interest, and contacts were also made with other universities through the Universities Transport Study Group. In the case of the Institutions and the Providers, all approaches were made to personal contacts of Professor May and his colleagues. Some of the employers could be approached in the same way, but transfer of staff during the implementation of the legislation meant that staff contacts approached during the preparatory stage were often being asked to anticipate their future employer's attitude to training.

One of the first steps in the implementation of the project was to establish a Steering Committee under the Chairmanship of Mr. Peter Goode, Chairman of the Yorkshire and Humberside Local Association of the Institution of Civil Engineers. The full membership which included representatives of all groups of employer, was:

- Mr. P. Goode (Chairman)
- Mr. T.D. Ellham
- Prof. A.D. May
- Mr. I.G. Turvey
- Mr. R. Bell
- Mr. D. Hardy/Mr. G. Ingle
- Mr. K. Hodgson
- Mr. W.E.A. Ixer
- Mr. M. Noble
- Mr. M. O'Shea/Mr. D. Naylor
- Mr. D. Rees
- Mr. D. Wears
- Mr. D. Wilson/Mr. B. Dean

Institution of Civil Engineers
University of Leeds
University of Leeds
University of Leeds
Department of Transport
PICKUP Representative
West Riding Automobile Co. Ltd.
Sheffield City Council
Calderdale D.C.
Manpower Services Commission
Leon Motor Services
West Yorkshire P.T.E.
Pell Frischmann Consultants

However, it did not prove possible for the bus operator representatives to attend.

The only serious problem which arose in the collaborative process was the delay which became evident among all employers in reaching decisions on training requirements. The project was originally envisaged as being virtually complete in the six months leading up to local government reorganisation. It soon became clear that much of this period would be taken up with
recruitment, and that little thought would be being given to training. As a result, the project was modified to spread the resources over a 14 month period to November 1986. Even so, many organisations had not fully established their training programmes by the end of this period. It is clear, however, that this project will have been of value to them in the formative stages of their training programmes.
5. **Information Gathering**

(A) **Training Needs**

Initial contact with employers was via letters outlining the project aims and the involvement of the Institute for Transport Studies in the work. Follow up telephone contact was then made to establish personal contacts within each organisation, with a view to arranging in-house interviews. These interviews, initially with local authorities and consultants and then with employers in the bus industry, sought to determine:

1) Current training activities  
2) Constraints on training activities  
3) Future training requirements.

Appendix 3 outlines the types of question which formed the basis of each interview. Where interviews could not be arranged then a formal questionnaire was distributed and postal replies sought.

In the Yorkshire and Humberside region interviews were achieved in:

- 9 out of 9 Metropolitan District Authorities  
- 4 out of 4 County Authorities (prior to abolition)  
- 5 out of 9 Transport consultants  
- 8 out of 37 Private bus operators  
- 2 Passenger Transport Executives  
- and 8 other bus operators.

In addition we also sought the views of:

- 10 other Metropolitan District Authorities in either Greater Manchester or Tyne and Wear.  
- and 8 other Providers of training and/or professional institutions.

The low response from the bus industry is the result of:

1) A project decision to interview a cross section of operators and send questionnaires to the rest. This resulted in more PTEs and municipal operators being approached than private operators. From these interviews it was found that attitudes to training and reactions to future demand were fairly standard throughout the industry, and generally negative. For this reason there was little point in chasing every operator in the region for a reply.

2) Private operators have, in the past, had little requirement for or interest in professional training. From the private operators interviewed it does not seem that this position will shift significantly in the coming months. The overall lack of interest in training in this sector is reflected in the poor response to questionnaires which were distributed when interviews were not arranged.
(B) Training Provision

A number of sources were approached throughout the duration of the project in an attempt to assess the national provision of short courses and seminars for the transport professional. These included:

1) Universities Transport Study Group
   This is a grouping of representatives of Universities active in the transport field. Each corresponding member was written to individually and the project was publicised at the Annual Conference held at the University of Wales, Institute of Science and Technology in January 1986.

2) Institution of Civil Engineers
   The Regional Education and Training Officer and the publication of approved courses for civil engineers gave a useful idea of the range of established short courses available to civil engineers in 1986/7.

3) P.T.R.C. - Planning and Transport Research and Computation
   This non-profit making body provides short courses with an overall objective of encouraging the development and rapid dissemination of better methods in:
   - National, regional and urban planning and design
   - Traffic and transport planning and operations
   - Highway planning, design and maintenance
   - Computer applications in the above and related fields.

4) Bus and Coach Training Ltd.
   This company evolved from the training committee of the Confederation of British Road Passenger Transport, in March 1984. It is active in providing training and advice to the passenger transport industry.

5) Miscellaneous courses identified through personal contacts or journal advertising

   For example:  Transport Studies Handbook
                  Traffic Engineering and Control Surveyor
                  Transport - Journal of the Chartered Institute of Transport
                  Highways and Transportation - Journal of the Institute of Highways & Transportation

6) PICKUP Directory
   This is a directory of short course information on a variety of subject areas available through the D.E.S. on microfiche. The level of description of each course is
excellent. The main problem of the directory is that 130 nationwide transport courses are accessed by almost as many keywords. In other words the search process for relevant courses in a subject area is very time consuming. Also, the use and cost of micro-fiche as a method for publishing information makes the data inaccessible to many potential users devoid of the appropriate hardware.

7) University of Bristol - School for Advanced Urban Studies Course Brochure

A list of all 95 contacts providing current training is given in Appendix 5 and Appendix 4 outlines the extent of current provision of short courses nationally and at the Institute for Transport Studies, University of Leeds.

C) Other Information Sources

(1) An insert in 'Traffic Engineering and Control' was also pursued in early 1986 asking readers to respond if they wished to be involved in the project and had not already been approached. In March 1986 the project brief also appeared in the review of ongoing research at ITS, published annually in Traffic Engineering and Control.

(2) The project steering group alerted the project to alternative sources of information and potentially useful contacts; for example, contacts in the Local Government Training Board, useful contacts in the bus industry (for the deregulation seminar) and in Local Authorities (for the TPP seminar).

D) Dissemination of Results

Conclusions of the project have been made available to other providers of training by a number of means:

1) This Institute for Transport Studies Technical Note publicised in professional journals.


3) A postscript to the project in 'PICKUP News' early in 1987.

For employers, the directory of national courses in transport collated during the duration of the 'PICKUP' project, will be managed in future by Transport Publishing Projects. The directory will be updated annually and published in the 'Transport Studies Handbook'.

It is also intended to keep the M.S.C. informed of future developments regarding the provision of Institute for Transport Studies short courses. Contact will be of an informal nature.
6. Findings of the Project

For both bus operators and local authority employers the time taken to overcome the organisational effects of recent legislation and to move towards an assessment of training needs has been much greater than at first anticipated.

Workload, political influence, budget constraints and fear of lost prestige should an employer be seen to be requiring extensive training, have all been major factors in affecting the response and quality of returns.

Typically postal returns, where used, have been poor. Out of nearly 60 questionnaires distributed, only 18 employers replied in this way and in many cases the quality of response was also not good. An interview appointment, often time consuming in terms of making the initial contact, is really the most productive form of assessing training needs.

The nature of training need varies both between and within our two major employer groups.

A) Bus Industry Contacts

Deregulation, and the understanding and interpretation of the issues involved has been the sole special area of interest throughout all sectors of the bus industry. In this area both the University of Manchester, Institute of Science and Technology (U.M.I.S.T.) and the Bus and Coach Council Training Ltd (B.C.C.T.) have been actively involved over recent months producing seminars and conferences for the industry. The U.M.I.S.T. approach has been to target all transport professionals, and a wide audience responded. B.C.C.T. have been more reserved and have tended to look just to education within the bus industry. The frequency of these events nationally over the last 12 months leads B.C.C.T. to conclude that there remains little scope for similar events in the near future.

In general, updating training in accountancy and management development are seen as more important than computer scheduling and forecasting to the transport professional. Few transport graduates are attracted into the industry, except in the larger P.T.E.s, and so great reliance is placed on The Chartered Institute of Transport (C.I.T.) and membership through examination, as a method of acquiring professional status.

In addition, skills training and maintenance are seen as crucial training areas for the 90% of bus industry employees who may not be classified as 'professional'.

Whilst C.I.T. training may well fall within the scope of this project, skills training for the manual work force does not. Also, there has been no indication from C.I.T. that deregulation would in any way affect the nature and content of the current training programme. However, should budgets become constrained
and the numbers attending C.I.T. training in any area be significantly reduced, then there may be a danger of the closure, due to lack of numbers, of present established courses. This may then create a demand to adapt other existing courses in the area to satisfy the training requirement.

Evidence of this occurring is still unclear, due to budgets to training remaining under review. However, should the monies available to training via C.I.T. in the West Yorkshire region be cut as expected from April 1987 it is at present unlikely that the Leeds Polytechnic C.I.T. courses will run in 1987/8.

A further complication in the bus industry is the issue of finance for training. Traditionally the industry has relied on a levy system and the use of local training boards to provide training as required and at a low cost. As a result employers are extremely reluctant to pay for any training course, to such an extent that even courses arranged by the Bus and Coach Council for its members have from time to time had to be cancelled due to lack of support.

B) Local Government/Consultants

Three main groups of employees are likely to be involved in either new or updating training:

1) School entrants
2) Graduates seeking professional status
3) Transport professionals requiring updating training or retraining.

Numbers involved vary from organisation to organisation but as a guide the market for (3) above is likely to be about 10 times the sum of (1) and (2).

Relocation of staff between authorities and consultants as a result of abolition has in many ways reduced the demand for urgent training. However, a number of major areas have been identified as being important in the coming years, namely:

1) Data collection, analysis and forecasting
2) Traffic management/restraint techniques
3) Professional development and management
4) Expert systems and new technology
5) Presentation at public enquiries
6) Availability of short courses for elected members.

For the new District Authorities the most urgent priority appears to be to provide a knowledge of the Transport Policies and Programmes procedure to staff not previously employed in this area of work. All District Authorities approached indicated at least partial interest in this area (depending on the quantity and quality of staff attracted from the abolished county councils). Consultants were less interested, but, having also attracted substantial personnel with experience in TPP.
production, may be valuable in the production of seminars/courses in this area in the future.

The project findings in respect of (A) and (B) above are summarised in Table 1.

C) Constraints

Whilst finance and time are always constraints cited as important by employers in all sectors, there has been little indication from local authorities that short courses running up to 3 days duration and costing up to £200 will greatly influence employers against participating in a course.

Indeed, even if a provider of training can be sure that course literature is reaching the intended target group, the most important factors in influencing participation appear to be:

1) The past reputation of the providing organisation.
2) The quality of presentation of course information.
3) Provision of a concise, clear review of course content.

There has been little indication that a full assessment of the relevance of the course is made prior to registration. Even after the course most organisations rely on a fairly subjective assessment of the course by the participant. It is therefore crucial that attention is devoted to the relevance of the course material, presentation in lectures, production of teaching aids and to the work/teaching environment and facilities for each short course, and the inclusion where possible of current practical examples.

In essence, marketing and presentation of the 'package' are an extremely important element in assessing 'value for money'.

For large organisations the concept of 'in-house' training may be attractive and interest has been shown for:

1) Statistics training (Strathclyde Regional Council)
2) Graduate training (West Yorkshire Highways, Engineering and Technical Services Joint Committee)

For the bus industry then the use of in-house training for management development has been said by large organisations to be desirable if at low cost. Beyond this the largest constraint to training seems to be achieving within the industry the right attitude to the need for education and training.
Table 1. Sector Demand for Updating

<table>
<thead>
<tr>
<th>Organisation</th>
<th>Nos. approached</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metropolitan Districts (SY)</td>
<td>4 100</td>
<td>✓ Deregulation</td>
</tr>
<tr>
<td>Metropolitan Districts (WY)</td>
<td>5 100</td>
<td>✓ ✓ ✓</td>
</tr>
<tr>
<td>Metropolitan Districts (T&amp;W)</td>
<td>5 60</td>
<td>✓ ✓ ✓</td>
</tr>
<tr>
<td>Metropolitan Districts (GM)</td>
<td>10 70</td>
<td>✓ ✓ ✓</td>
</tr>
<tr>
<td>Shire Counties *</td>
<td>2 100</td>
<td>✓ ✓ ✓</td>
</tr>
<tr>
<td>Transport Consultants (SY, WY)</td>
<td>9 56</td>
<td>✓ ✓ ✓</td>
</tr>
<tr>
<td>Private Bus Operators (SY, WY, Shire*)</td>
<td>37 21</td>
<td></td>
</tr>
<tr>
<td>P.T.E.s</td>
<td>2 100</td>
<td>✓ ✓ ✓</td>
</tr>
<tr>
<td>N.B.C. Subsidiaries</td>
<td>6 100</td>
<td>✓ ✓ ✓</td>
</tr>
<tr>
<td>Municipal Operators*</td>
<td>2 100</td>
<td>✓ ✓ ✓</td>
</tr>
</tbody>
</table>

Notes: * North Yorkshire, Humberside
  ** In-house
  SY South Yorkshire
  WY West Yorkshire
  T&W Tyne & Wear
  GM Greater Manchester
7. Training Needs and Provision

From our discussions with employers it has become clear that very few have a complete knowledge of the current provision of transport related short courses. If a need arises and personal contacts do not reveal appropriate local provision then evidence shows that either an employer will make do with existing courses not exactly matched to his/her needs and thereby risk dissatisfaction or alternatively not pursue the training and so be forced to seek, through employment, suitably qualified and, experienced personnel.

Our review of short courses for the transport professional has revealed between 250 and 300 short courses nation wide that do not exist in any concise reference publication. The publishers of the Transport Studies Handbook are to publish a course review based on our findings.

Beyond a basic ignorance of course provision several training needs have been identified:

1. Deregulation

A one day seminar entitled 'The Effects of the 1985 Transport Act on the Delivery of Local Bus Services' was held at the University of Leeds on 20 June 1986. 36 delegates, 70% from within the bus industry attended the event and discussed registration/enforcement issues, tendering, concessionary fares and education travel, with a number of invited speakers.

In recent months a number of other seminars have been held nationwide on related subject areas, and although there is little scope at present for similar events, there has been an expressed interest in a review of deregulation effects in the coming year.

Professor Gwilliam of the Institute for Transport Studies will be responsible for identifying demand in the coming months, and designing the necessary courses.

2. Transport Policies and Programmes

The University of Leeds is to organise a one day seminar, using external speakers, in March 1987 to discuss the historic background to the T.P.P. process, current requirements and assessment procedures. To date we have received expressions of interest from 14 authorities and are therefore looking to an anticipated delegate list in the region of 35-40 persons.

3. Other Pickup Initiatives

These include:

A) Targeting the current Transport Policy Formulation and Assessment short course at local district employees in January 1987 (as a duplicate of the July 1986 course)
B) Targeting elected members early in 1987 with a view to producing a number of evening courses related to transport policy and decision making.

C) Developing a new course for local authorities and consultants in July 1987 which expands on the statistical techniques taught in the 'Basic Statistics' course (especially regression). Also to be included here are backgrounds to data capture devices and survey design (including attitudinal and behavioural surveys).

D) Developing a course on design and assessment for traffic management schemes with input from the urban traffic control team in West Yorkshire.

E) Preparation of a seminar on expert systems applications to transport to be held at the University of Leeds in the New Year based on workshops run in November 1986.

F) In-house Courses:

As a result of the PICKUP work, discussions are in hand to develop In-house Courses with two authorities in the New Year, in the fields of graduate training in Transport Policy, and basic statistics for transport professionals.

It is hoped that (A) to (D) above will be added to the regular short course programme. Further information is required concerning the demand for courses in presentation at public enquiries and management development. At this stage there are no further plans in these areas except to continue to monitor interest and need and thereby assess course viability.
8. **Assessment of Impact of L.C.P.**

Although the time taken to identify contacts and achieve responses was greater than initially envisaged we have been successful in achieving our aim of involving both employers and providers of training in all aspects of the project. Not only have certain short term needs been identified but longer term short course development has been made possible by our discussions with employers.

Two important by products have resulted from the work:

1) The anticipated production of a short course directory for the transport professional.

2) An updating of contact lists for short course literature.

If the benefits of this PICKUP work are to be maintained then it will be important not to lose the current links with training officers that have been developed both locally and nationally. A continued commitment to updating training methods and assessment of training needs and provision by the University is seen as essential in achieving this aim. In times of financial restrictions to training budgets it is also important that the presentation and marketing, as well as course content, achieves a high standard and that in the provision of new courses we look to the true needs of the 'customer' and not purely at academic course content and ideals.

Although the funding for this work is drawing to a close it is seen as important that, due to the still evolving organisational nature of the bus industry and local authorities in the metropolitan areas, continued review and monitoring of training needs is desirable.

Had the L.C.P. involvement not been available then it is likely that:

A) The University would not have updated and created new mailing lists for short course information as quickly as has occurred.

B) The short term seminars on deregulation and T.P.P. would not have been planned.

C) A list of future course options would not have been created based on such a wide range of employers' views.

By involvement in the L.C.P. the University has been able to raise its profile in the short course market and be seen to be satisfying the needs of employers and not merely fulfilling a role of producing annual courses which may have less practical significance as the emphasis on training needs changes over time.
APPENDIX 1:

FUNDING
APPENDIX 1:

FURTHER READING


<table>
<thead>
<tr>
<th>Course</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRANSPORT POLICY FORMULATION AND ASSESSMENT</td>
<td>7-9 January 1987</td>
</tr>
<tr>
<td></td>
<td>29 June – 2 July 1987</td>
</tr>
<tr>
<td>TRAFFIC ASSIGNMENT MODELS: RECENT ADVANCES</td>
<td>19-21 January 1987</td>
</tr>
<tr>
<td></td>
<td>23-25 September 1987</td>
</tr>
<tr>
<td>BASIC STATISTICS FOR TRAFFIC AND TRANSPORT</td>
<td>19-21 January 1987</td>
</tr>
<tr>
<td></td>
<td>2-4 September 1987</td>
</tr>
<tr>
<td>ACCURACY ESTIMATION AND COMBINATION OF TRIP MATRICES</td>
<td>2 June 1987</td>
</tr>
<tr>
<td>ECONOMIC EVALUATION IN TRANSPORT PLANNING</td>
<td>22-24 April 1987</td>
</tr>
<tr>
<td></td>
<td>21-23 September 1987</td>
</tr>
<tr>
<td>TRIP MATRIX ESTIMATION AND VALIDATION</td>
<td>3-5 June 1987</td>
</tr>
</tbody>
</table>

Further information on all the courses may be obtained from:

T. D. Bilham
Director of Continuing Education
Department of Adult and Continuing Education
University of Leeds
LEEDS LS2 9JT

Tel: Leeds (0532) 435036
Basic Statistics for Traffic and Transport

... designed to give a firm grounding in the statistical principles applied to traffic and transport
... for transport planners and engineers to acquire a working understanding of statistical methods and those in middle management who need an appreciation of basic principles. It does not assume prior knowledge of statistics (only basic mathematical skills), yet will also be valuable to those with some previous exposure to statistics. A high staff/student ratio facilitates understanding.

Statistical concepts include:

- estimating the accuracy of estimates (for example trip rates) from surveys of traffic or households;
- estimating sample sizes to meet certain accuracy conditions;
- estimating the accuracy of grossed up data;
- assessing whether an observed change in a quantity of interest (eg a trip rate) is likely to have arisen purely by chance or is likely to indicate an underlying real change;
- combining in the best way two or more estimates of the same quantity.

Dates: 19-21 January 1987
2-4 September 1987
Approved by The Institute of Civil Engineers: PE1 (2 days)

Accuracy Estimation and Combination of Trip Matrices

... building directly on the Basic Statistics for Traffic and Transport.

Content covers the variance estimation and combination programs RDMVAR and RDMERGE in the Department of Transport's Matrix Building and Validation Suite.

Emphasis is on application of statistical principles and the interpretation of results. This 1-day course is a natural pre-cursor to the course on Trip Matrix Estimation and Validation.

Date: 2 June 1987
Pending approval by The Institute of Civil Engineers.

Economic Evaluation in Transport Planning

... designed to provide an up-to-date review of the economic evaluation of transport projects and policies... for staff taking on new responsibilities or who need a refreshing look at the principles and practice involved.

Content: Cost benefit analysis; the SACTRA Report on Urban Roads Appraisal; treatment of risk in project appraisal; multi-criteria decision-making procedures; assessment of transport benefits; evaluation of travel time savings; capital budgeting.

Topics are seen in their applied context with relevant illustrative examples. Practical tools include the Department of Transport's COBAS road appraisal procedures and the Department of Transport/Stephen Glaister evaluation system for public transport subsidies.

Dates: 22-24 April 1987
21-23 September 1987
Approved by The Institute of Civil Engineers: PE1/PE2 (3 days)

Trip Matrix Estimation and Validation

... going beyond the statistical concepts covered in the 'Basic Statistics' course to cover the techniques used in fitting and validating models.

Topics include: gravity and direct demand models of trip distribution; methods of estimating O-D matrices from traffic counts; statistics used in the RDCOSM programs of the Matrix Validation Suite; and methods of model validation that take account of both model and data accuracy.

For those not already familiar with methods of estimating the accuracy of observed matrices, it may be helpful to take the preceding 1-day course on 'Accuracy Estimation' as well.

Date: 3-5 June 1987
Pending approval by The Institute of Civil Engineers.

Transport Policy Formulation and Assessment

... encourages participants to question the objectives of transport policy, to discuss their relative importance and to assess the effectiveness of different types of transport policy action in meeting these objectives in an urban context.

The structure is designed to enable the adoption of a logical approach and provides an opportunity to learn by participation in GUTS, the computer-based transport planning game.

... appropriate for staff with local and central government, public transport operators, consultants, freight operators and other organisations which make extensive use of transport; also of interest to local councillors and others concerned with the formulation of transport policy.

Dates: 7-9 January 1987
29 June - 2 July 1987
Approved by The Institute of Civil Engineers: PE2 (3 days)

Traffic Assignment Models: Recent Advances

... introducing recent advances in traffic assignment models to transport planners and traffic engineers concerned with the assignment of vehicle trips to road networks.

... appropriate for staff of Local Authorities, Central Government, Transport Consultancies and Academic and Research Organisations.

A major emphasis is on techniques proven in practical applications. Advances which are likely to become common practice within the next few years will also be covered. Topics covered are applicable to networks ranging in size from the national to the local central area.

... demonstrations of Leeds assignment programs (in particular the SATURN Suite)

... workshops using both main frame and micro computers.

Dates: 19-21 January 1987
23-25 September 1987
Pending approval by The Institute of Civil Engineers.
APPENDIX 3: QUESTIONNAIRE/INTERVIEW FORMAT
LOCAL AUTHORITY/CONSULTANT TRAINING REQUIREMENTS

The following questions seek to examine the training needs of Local Authorities' and Consultants' professional and technical staff in relation to Highway Engineering and Transport Planning. In particular we are interested in those functions relating to:

(a) Highway design/construction/maintenance
(b) Traffic management
(c) Freight
(d) Public transport.

However, if you feel that we should be considering the training requirements for other functions, we should be happy to discuss them.

In the performance of each function a series of processes may reflect varying training requirements. It may be helpful to consider separately the training needs at each of the following stages:

(a) Forecasting/determining need
(b) Detailed design/engineering/planning
(c) Implementation and operation (professional staff only)
(d) Assessment/evaluation.

A list of detailed transport functions is appended to the back of the questionnaire. Please use the associated tables to record the relevant information.

Thankyou

N.B. This format is also suitable for bus industry contacts.
A. Current position

1. How many staff do you currently have employed in total to fulfil your current transport functions?
   
   ..........professional engineers/planners.......
   ........technical/support staff..............
   ........TOTAL..............................

2. How many staff do you currently have employed in the following transport areas?:
   
   1. Highway construction/maintenance
   2. Traffic management
   3. Freight
   4. Public transport

   (Please specify if these are professional or technical/support staff and refer to the attached list for individual functions within these broad categories).

3. How many staff do you currently have employed dealing with statutory transport/highways functions relating to:

   (Please specify if these are professional or technical/support staff).
   
   1. Local transport planning?
   2. Development control?
   3. General improvement areas?
   4. Economic evaluation?
   5. Environmental evaluation?
   6. Data provision/analysis/forecasting?
   7. Computer support?
   8. DLO management?
   9. Marketing/publicity?
Are there any other functions which have not been covered?

(Please supply details)

4. Are you able to call on other members of your staff to assist with any of the functions in (2) or (3)?

5. Is there a need for training to update your present staff to carry out their present functions?

6. Which functions do these needs arise for?

How many staff are involved?

(Please specify if they are professional or technical/support staff).

7. How are training needs identified?

8. Are training needs identified differently where new or updating training is required?
What courses have your transport related staff attended in the past 12 months?

What were their specific training needs?

Are there any other courses attended on a regular basis by your transport related staff?

10. Did you and/or your staff consider the courses adequate?

11. Are your staff encouraged to participate in courses outside transport planning/engineering?
B. Training constraints

1. Who is formally responsible for training related to transport?
   Does the same person approve training?

2. What is the annual budget allocated for training related to the transport functions performed?
   Is there a maximum amount available to individual members of staff?

3. What are the major general constraints on you sending staff on short courses?

4. Are there any further constraints specific to particular transport functions?

5. Do you have a preference for any particular course format?
   If so, please specify.

6. Could specific training needs be better satisfied by using a different training method?
C. **Future training**

1. With which of the transport functions (see attached list) do you expect to be involved after 1st April, 1986?

2. To what extent do you expect to fulfil each of these functions by
   a) re-allocation of existing staff?
   b) employment of new staff?
   c) use of specialists?
   d) use of outside skills?

   (Please specify if staff are to be professional engineers or technical/support staff).

3. What training needs do you anticipate will arise from each of the options in (2)(above), for both professional and technical staff?

4. Will there be a need for a generalised training in transport planning/engineering?
### Transport Functions

1. **Highway Engineering**
   - Highway construction/design
   - Highway Maintenance
   - Bridge Construction/Design
   - Bridge Maintenance
   - Noise/construction noise control
   - Highway lighting

2. **Traffic Management**
   - Parking provision/operation (on/off street)
   - Signals and UTC
   - Bus priority schemes
   - Traffic regulation orders
   - Pedestrian/cyclist facilities
   - Accident studies

3. **Freight**
   - Lorry routes/abnormal load routing
   - Freight operator licencing
   - Access to industry

4. **Public Transport**
   - Service levels/routes/schedules
   - Fares
   - Interchange developments
   - Recreation/community transport
   - Infrastructure

5. **Wider Issues**
   - Local transport planning
   - Transport aspects of development control
   - General improvement areas
   - Economic evaluation
   - Environmental evaluation
   - Data provision/analysis/forecasting
   - Management of OLO
   - Computer support
   - Marketing/publicity of public transport
   - Materials testing

6. **Other Functions**
PUBLIC TRANSPORT FUNCTIONS

STAFF:

1. **Service coordination and management.**
   - Bus service levels, routes and schedules.
   - Rail service levels and schedules.
   - Service integration.
   - Bus/rail coordination.
   - Upgrading of services.
   - Non-stage bus services.
   - Recreational public transport.
   - Rural transport.
   - Other public and community transport schemes.
   - Coordination between bus operators.
   - Coordination between the local planning authority and transport operators.

2. **Studies and data collection.**
   - General bus studies.
   - Land-use/transportation studies.
   - Interchange studies.
   - Light rapid transit and other new modes.
   - Other data collection.
   - Analysis.
   - Forecasting.
   - Computer support.

3. **Planning issues.**
   - T.P.P. input.
   - Development control issues.
   - Liaison with other bodies.

4. **Traffic management and control.**
   - Bus priority schemes.
   - Bus stop location.
   - Urban traffic control.
   - Pedestrian streets.
   - Park and ride facilities.

5. **Finance and administration.**
   - Bus fares.
   - Rail fares.
   - Concessionary fares.
   - Revenue support.
   - Grant administration.
   - Accounting.
   - Taxi and private hire licencing.
   - Marketing and publicity.

6. **Maintenance.**
   - Bus vehicles.
   - Bus garages.
   - Rail rolling stock.

7. **Equipment and infrastructure.**
   - Bus service infrastructure.
   - Bus vehicle replacement.
   - Bus garage provision.
   - Rail infrastructure.
   - Rail rolling stock replacement.
   - Radio and control equipment.
   - Ticket equipment.
APPENDIX 4:  TYPES OF SHORT COURSES NATIONALLY

Courses are available under the following headings:

1) Highway engineering, maintenance, specialist engineering
2) Traffic management
3) Transport planning/policy
4) Public transport
5) Law/contracts
6) Freight
7) Computing, modelling, surveys, data collection
8) General planning/engineering
9) Miscellaneous

For each of the headings above a range of courses from a number of providers are available which will be included in a directory of short courses updated and published annually in the Transport Studies Handbook. Each entry will contain details of course title, location, duration, cost, course contact etc. An address list of contacts at each of the providing institutions should also be included in any future directory.
APPENDIX 5: PICKUP CONTACTS
Dr G Billington
Babtie Shaw and Morton
Consultant Civil Engineers
Exchange House
Queen Street
WAKEFIELD WF1 1JR
Tel: Wakefield 362915

Mr J Hopkins
Babtie Shaw and Morton
Consultant Civil Engineers
Exchange House
Queen Street
WAKEFIELD WF1 1JR
Tel: Wakefield 362915

Mr Thompson
Barnsley Metropolitan Borough Council
Town Hall
Church Street
BARNESLEY
Tel: Barnsley 203232

Mr M Mumford (also) Mr Fletcher (Extn. 2242)
(Traffic & Transportation)
Barnsley Metropolitan Borough Council
Town Hall
Church Street
BARNESLEY
Tel: Barnsley 203232

Mr R Atkinson also Mr A Mainwaring
Director of Development Services
City of Bradford Metropolitan Council
Jacob's Well
Manchester Road
BRADFORD BD1 5RW
Tel: Bradford 753934

Mr C Springthorpe
Senior Engineer (Roads)
City of Bradford Metropolitan Council
Jacob's Well
Manchester Road
BRADFORD BD1 5RW
Tel: Bradford 753934

Mr J Knight
Assistant Director; Engineering Services
City of Bradford Metropolitan Council
Jacob's Well
Manchester Road
BRADFORD BD1 5RW
Tel: Bradford 753934

Mr J R Barker
Management Development Manager
British Railways Board
Rail House
Euston Square
LONDON NW1 2DZ
Tel: 01/262/3232
Maurice Jones
Principal Officer
Bus & Coach Training Ltd
Sardinia House
Lincoln's Inn Fields
LONDON WC2A 3LZ  Tel: 01/831/8901

Mr A Blower
Principal Civil Engineering Training Officer
British Rail (Engineering)
The Grove
WATFORD WD1 3TR  Tel: 0923/42361

Mr R Stuart
Principal Management Training Officer
British Rail (Operations)
The Grove
WATFORD WD1 3TR

Dennis Quin
Bus & Coach Training Ltd
Sardinia House
Lincoln's Inn Fields
LONDON WC2A 3LZ  Tel: 01/831/8901

Mr M Noble
Borough Engineer
Metropolitan Borough of Calderdale
P 0 Box 33
Northgate House
Northgate
HALIFAX HX1 1UN  Tel: Halifax 57257 Ext. 2100

Capt. K Alcock
Director of Education & Training
Chartered Institute of Transport
80 Portland Place
LONDON WIN 4DP  Tel: 01/636/9952 & 01/212/8644

Tom Beagley
Chartered Institute of Transport
80 Portland Place
LONDON WIN 4DP  Tel: 01/636/9952 & 01/212/8644

L F Aldridge
Chartered Institute of Transport
80 Portland Place
LONDON WIN 4DP  Tel: 01/636/9952 & 01/212/8644
L English
(WYPTE)
Chartered Institute of Transport
80 Portland Place
LONDON WIN 4DP Tel: 01/636/9952 & 01/212/8644

A J Homer
(Director)
Department of Transport
Yorkshire & Humberside Regional Office
City House
LEEDS
LS1 4JD Tel: Leeds 438232

N R Taylor
Department of Transport
Yorkshire & Humberside Regional Office
City House
LEEDS
LS1 4JD Tel: Leeds 438232

Mr R Bell
Department of Transport
Yorkshire & Humberside Regional Office
City House
LEEDS LS1 4JD Tel: Leeds 438232

Mr Murray also N Rees
(Staff Training)
Department of Transport
2 Marsham Street
LONDON SW1P 3EB Tel: 01/211/3126

Jill Bramham
(Diary Secretary)
Department of Transport
2 Marsham Street
LONDON SW1P 3EB Tel: 01/211/3126

Mr G Lister
Area Manager
Construction Industry Training Board
Bircham Newton
Kings Lynn
NORFOLK PE13 6RH Tel: 048/523/291

Personnel & Management Services
Aiden House
Tynegate Precinct 8
Gateshead
Mr J M H Armitage  
(Courses)  
Construction Industry Training Board  
Bircham Newton  
Kings Lynn  
NORFOLK PE13 6RH  
Tel: 048/523/291

Mr Pratt  
Doncaster Metropolitan Council  
Public Works Dept.  
Scarborough House  
Chequer Road  
DONCASTER  
Tel: Doncaster 734444

Mr Ashby  
Director  
Doncaster Metropolitan Council  
Public Works Dept.  
Scarborough House  
Chequer Road  
DONCASTER  
Tel: Doncaster 734444

Mr Roger Eyre  
Assistant Director  
Doncaster Metropolitan Council  
Public Works Dept.  
Scarborough House  
Chequer Road  
DONCASTER  
Tel: Doncaster 21301

Mr A McCluskey  
Chief Engineer (Traffic & Transpfn.)  
Doncaster Metropolitan Council  
Public Works Dept.  
Scarborough House  
Chequer Road  
DONCASTER  
Tel: Doncaster 21301

Training Department  
Greater London Council  
County Hall  
LONDON SE1 7PB  
Tel: 01/633/5000

J Venn  
Director  
Haiste International Group Ltd  
20 Wood Lane  
LEEDS 6  
Tel: Leeds 783411

Mr P Goode  
Chairman  
Yorkshire & Humberside Association of the Institution of Civil Engineers  
24 Wetherby Road  
Acomb  
YORK  
Tel: York 53022 Ext. 2001
J Menzies  
Regional Training Officer  
8 Church Walk  
Ruxton  
CHORLEY  
Lancs  
Tel: 02572/71978 (Home)

Institution of Civil Engineers  
Great George Street  
Westminster  
LONDON  SW1P 3AA  
Tel: 01/222/7722

Patricia Steel  
Secretary  
Institution of Highways & Transptn.  
3 Lygon Place  
Ebury Street  
LONDON  SW1W 0JS  
Tel: 01/730/5245

Mr Vein  
Director Technical Services  
Kirklees Metropolitan Council  
Oldgate House  
HUDDERSFIELD  HD1 6QF  
Tel: Huddersfield 22133

Mr Stansfield  
Chief Engineer  
Kirklees Metropolitan Council  
Oldgate House  
HUDDERSFIELD  HD1 6QF  
Tel: Huddersfield 22133

Mr R Saich  
Director Highways  
Kirklees Metropolitan Council  
Oldgate House  
HUDDERSFIELD  HD1 6QF  
Tel: Huddersfield 22133

Mr R S Bristow  
Training  
Leeds City Council  
Merrion House  
110 Merrion Centre  
LEEDS  LS2 6JJ  
Tel: Leeds 46300
Mr H Wyborn  
Director Highways & Engineering  
Leeds City Council  
Merrion House  
110 Merrion Centre  
LEEDS LS2 8JJ  
Tel: Leeds 46300

Mr J Finney  
Director Planning  
Leeds City Council  
Merrion House  
110 Merrion Centre  
LEEDS LS2 8JJ  
Tel: Leeds 46300

Mr I Blair  
Traffic  
Leeds City Council  
Merrion House  
110 Merrion Centre  
LEEDS LS2 8JJ  
Tel: Leeds 46300

Mr Eddie Doc  
Senior Training Adviser  
Local Government Training Board  
Ardale House  
The Arndale Centre  
LUTON LU1 2TS  
Tel: Luton 451166

Mr D Naylor & Mr M O'Shea  
Regional Development Officers  
Yorkshire & Humberside Regional Office  
33-41 Park Place  
LEEDS LS1 2RL  
Tel: Leeds 446299 Ext. 525

Mr M Lowe  
Manpower Services Commission  
Moorfoot  
SHEFFIELD S1 4PQ

Mr J Ferrier  
Edinburgh Regional Office  
c/o Manpower Services Commission  
Moorfoot  
SHEFFIELD S1 4PQ

Mr R Marshall  
Newcastle Regional Office  
c/o Manpower Services Commission  
Moorfoot  
SHEFFIELD S1 4PQ
Mr B Winterbottom  
Manchester Regional Office  
c/o Manpower Services Commission  
Moorfoot  
SHEFFIELD S1 4PQ

Mr M Malpas  
Birmingham Regional Office  
c/o Manpower Services Commission  
Moorfoot  
SHEFFIELD S1 4PQ

Mr J Evans  
Cardiff Regional Office  
c/o Manpower Services Commission  
Moorfoot  
SHEFFIELD S1 4PQ

Mr N Harrington  
Bristol Regional Office  
c/o Manpower Services Commission  
Moorfoot  
SHEFFIELD S1 4PQ

Mr C Hurd  
Basingstoke Regional Office  
c/o Manpower Services Commission  
Moorfoot  
SHEFFIELD S1 4PQ

Mr C Rigg  
London Regional Office  
c/o Manpower Services Commission  
Moorfoot  
SHEFFIELD S1 4PQ

Diane Wilson  
Director of Personnel & Training  
National Bus Company  
172 Buckingham Palace Road  
LONDON SW1 W19N  
Tel: 01/730/3453

Mr D Flower  
National Bus Company  
172 Buckingham Palace Road  
LONDON SW1 W19N  
Tel: 01/730/3453
Mrs Wheeler
Training
South Yorkshire PTE
Exchange Street
SHEFFIELD S2 5SZ
Tel: Sheffield 78688

Mrs Killingley
Training Officer
City of Wakefield Metropolitan Dist. Council
Newton Bar
Leeds Road
WAKEFIELD WF1 2TT
Tel: Wakefield 370211

Mr P Primmer
Chief Traffic & Transportation Officer
City of Wakefield Metropolitan Dist. Council
Newton Bar
Leeds Road
WAKEFIELD WF1 2TT
Tel: Wakefield 370211

P D Spawforth & Mr T Armitage (Planning)
Chief Planning Officer
City of Wakefield Metropolitan Dist. Council
Newton Bar
Leeds Road
WAKEFIELD WF1 2TT
Tel: Wakefield 370211

WGC Kirby
Chief Building and Services Manager
City of Wakefield Metropolitan Dist. Council
Newton Bar
Leeds Road
WAKEFIELD WF1 2TT
Tel: Wakefield 370211

Mr JM Barr & Mr G Steel (Operations Manager)
Managing Director
Wallace Arnold
Head Office
Gelder Road
LEEDS LS12 6DH
Tel: Leeds 636456

Mr J King
Managing Director (Tours)
Wallace Arnold
Head Office
Gelder Road
LEEDS LS12 6DH
Tel: Leeds 636456

Mr C P McKay
Chief Executive
West Yorkshire Residuary Body
County Hall
WAKEFIELD WF1 2QW
Tel: Wakefield 367111
Mr M Clarke
West Yorkshire Residuary Body
County Hall
WAKEFIELD WF1 2QW
Tel: Wakefield 367111

Mr P White
West Yorkshire PTE
Metro House
West Parade
WAKEFIELD WF1 1NS
Tel: Wakefield 378234

D Wears
Training Officer
West Yorkshire PTE
1 Swinegate
LEEDS LS1 4DQ
Tel: Leeds 451601

Mr W F Cotton
Director of HETS
West Yorkshire Highways Engineering &
Technical Services Joint Committee (HETS)
Dudley House
Selectapost 6, 133 Albion Street
LEEDS LS1 Tel: Leeds 463000

Mr Ingle
Yorkshire & Humberside Regional Agent
Pickup Office
Bowling Green Terrace
LEEDS LS11 9SX
Tel: Leeds 438634

Mr Foster
Company Secretary
Yorkshire Traction
Upper Sheffield Road
BARNSL BY S70 4PP
Tel: Barnsley 202555

Mr A McCartney
(Traffic)
Husband & Co
388 Glossop Road
SHEFFIELD S10 2JB
Tel: Sheffield 71242
Mr J Walker
Jamieson Mackay & Partners
Windsor House
Cornwall Road
HARROGATE HG1 2PW  Tel: Harrogate 68903

Mr Robert Jacoby
Jamieson Mackay & Partners
Windsor House
Cornwall Road
HARROGATE HG1 2PW  Tel: Harrogate 68903

Mr Pittam
Jamieson Mackay & Partners
Windsor House
Cornwall Road
HARROGATE HG1 2PW  Tel: Harrogate 68903

Mr Lucas
Jamieson Mackay & Partners
Windsor House
Cornwall Road
HARROGATE HG1 2PW  Tel: Harrogate 68902

Mr Taylor
J Dossor & Partners
Consulting Engineers
West Huntington Hall
Church Lane
Huntington
YORK Y03 9RE  Tel: York 768102

Mr Corrigan
White Young Prentice Royal
Consultant Engineers
Arndale Centre
Otley Road
LEEDS 6  Tel: Leeds 787111

Mrs Byrne
Training Officer
Frank Graham & Partners
Consultant Civil Engineers
72 London Street
READING RG1 4SJ  Tel: Reading 585058

Col. G Leech
County Engineer & Surveyor
North Yorkshire County Council
County Hall
NORTHALLERTON
North Yorkshire DC7 8AD  Tel: Northallerton 3123
Mr P B Alexander  
Assistant County Surveyor  
North Yorkshire County Council  
County Hall  
NORTHALLERTON  
North Yorkshire  DC 7 8AD  
Tel: Northallerton 3123

Mr Coppitt  
County Training Officer  
North Yorkshire County Council  
County Hall  
NORTHALLERTON  
North Yorkshire  DC7 8AD  
Tel: Northallerton 3123

Mr R King  
North Yorkshire County Council  
County Hall  
NORTHALLERTON  
North Yorkshire  DC7 8AD  
Tel: Northallerton 3123

Mr Roberts  
Highways & Transportation Dept.  
North Yorkshire County Council  
County Hall  
NORTHALLERTON  
North Yorkshire  DC7 8AD  
Tel: Northallerton 3123

Mr J Wheeler  
Assistant Director Traffic  
Humberside County Council  
County Hall  
BEVERLEY  
Humberside  HU17 ODE  
Tel: Hull 867131

Mr A Hunter  
Assistant Director Planning  
Humberside County Council  
County Hall  
BEVERLEY  
Humberside  HU17 ODE  
Tel: Hull 867131

Mr Draper  
General Manager  
South Yorkshire Road Transport Ltd (Omnibuses)  
78 Northgate  
PONTEFRACT  
Tel: Pontefract 704477

Director (Traffic)  
Tyne & Wear County Council  
Sandyford House  
Archbold Terrace  
NEWCASTLE  NE2 1ED  
Tel: 091/281/6144
Borough of Sunderland
Planning & Engineering Dept
Town Hall & Civic Centre
SUNDERLAND SR2 7DN
Tel: Sunderland 76161

Chief Executive
North Tyneside Met. Borough Council
14 Northumberland Square
NORTH SHIELDS
Tel: North Shields 575544

Personnel
North Tyneside Met. Borough Council
7 Northumberland Square
NORTH SHIELDS
Tel: North Shields 577486

Personnel & Management Services Dept
Borough of South Tyneside
Westoe Hall
Westoe Village
SOUTH SHEILDS
Tel: South Shields 4552191

Chief Executive's Dept
Town Hall
SOUTH SHEILDS
Tel: South Shields 4554321

Mr S Kelly
Director of Engineering Services
Chief Executive's Office
Gateshead Metropolitan Borough Council
Town Hall
GATESHEAD
Tel: Gateshead 4771011

Mr A V Bordman
City Engineer
Newcastle Upon Tyne City Council
Civic Centre
NEWCASTLE-UPON-TYNE
Tel: Newcastle 328520

John Kershaw
City Engineer
Public Works Dept
Manchester Metropolitan City Council
Town Hall
MANCHESTER M60 2JT
Tel: 061/247/3680
Engineers Dept
Trafford Metropolitan Borough Council
Town Hall
Stretford M32 OTH  Tel: 061/872/6133

T Gorton
Principal Engineer
Tameside Metropolitan Borough Council
Council Offices
Wellington Road
Ashton-Under-Lyne
Lancs  OL6 6DL  Tel: 061/344/3931

Salford Metropolitan District Council
Civic Centre
Chorley Road
SWINTON  M27 2AD  Tel: 061/834/2363

Wigan Borough Metropolitan Council
Civic Centre
Millgate
WIGAN  WN1 1YD  Tel: Wigan 44991

Bolton Metropolitan District Council
Town Hall
BOLTON  BL1 1RU  Tel: Bolton 22311

Mr B A Marsh
Director of Engineering
Bury Metropolitan District Council
Knowsley Street
Bury  BL9 0SW  Tel: 061/764/6000

Rochdale Metropolitan District Council
P O Box 15
Town Hall
ROCHDALE  OL16 1AB  Tel: Rochdale 47474

Oldham Metropolitan District Council
P O Box 33
Civic Centre
West Street
OLDHAM  OL1 1UJ  Tel: 061/624/0505
Stockport Metropolitan District Council
Town Hall
STOCKPORT SK1 3XE
Tel: 061/480/4949

Mrs Anderson
Fords of Ackworth Ltd
Coach & Haulage
Bell Lane
ACKWORTH
Tel: Hemsworth 611083

Mr Kaye
J J Longstaff & Sons Ltd
64 Daisy Hill
DEWSBURY
Tel: Dewsbury 463124

Mr G Houson
Joseph Wood & Son
Lynwood Lee Green
Mirfield WS14 OAB
Tel: Mirfield 492213

Mr Wadsworth
Travelways
4 Copley View
Copley
HALIFAX
Tel: Halifax 66330
West Yorkshire

Mr Boyd
Admin. Manager
East Yorkshire Motor Services Ltd
252 Anlaby Road
HULL
Tel: Hull 27142

Mr K Holmes
General Manager
United Automobile Services Ltd
United House
Grange Road
Darlington
CO DURHAM
Tel: Darlington 465252

Mr K Hodgson
Managing Director
c/o Mrs Golding (Secretary)
West Riding Automobile Co Ltd
24 Barnsley Road
WAKEFIELD
Tel: Wakefield 375521
West Yorkshire
Mr Machell
Training Officer
West Riding Automobile Co Ltd
24 Barnsley Road
WAKEFIELD Tel: Wakefield 375521
West Yorkshire

Ms Kate Liversedge
West Yorkshire Road Car Co
East Parade Tel: Harrogate 66061 or
HARROGATE Tel: Leeds 442621

Mr K Hodgson
Managing Director
Yorkshire Woollen District Co Ltd
Saville Town
DEWSBURY Tel: Dewsbury 461141

Mr B Robinson
Manager
W R & P Bingley Ltd
Hunters Farm Garage
Corton Street
Kinsley
PONTEFRACT Tel: Hemsworth 612684

Mr K Bedford
SKJ Motors (Shelley) Ltd
17 Royd House
Shelley
HUDDERSFIELD HD8 8LR Tel: Huddersfield 605111

Mr M Draper
General Manager
South Yorkshire Road Transport Ltd
78 Northgate
PONTEFRACT WF8 1HJ Tel: Pontefract 704477

JAC Edwards
General Manager
Edwards Coachways Ltd
Low Fold Garage
New Road Side
Horsforth
LEEDS LS18 4DR Tel: Leeds 588619
M
S M Boyes
Norman Boyes
1 Brownroyd Walk
Wibsey
BRADFORD BD6 1SB
Tel: Bradford 676227

M
B Crowther
Black Prince Coaches
York Cottage
Texas Street
Morley
LEEDS LS27 0HG
Tel: Leeds 532305

M
M J Holmes
General Manager
East Midlands Motor Services Ltd
New Street
CHESTERFIELD
Derbyshire S40 2LQ
Tel: Chesterfield 77451

M
Mr S Senior
General Manager
Lincolnshire Road Car Co Ltd
P O Box 15
St Marks Street
LINCOLN LN5 7BB
Tel: Lincoln 22255

M
Mr R A Rees
General Manager
Leon Motor Services Ltd
Finningley
DONCASTER DN9 3DD
Tel: Doncaster 770273/770283

M
Mr A T Lavin
Managing Director
Excelsior Coaches (Yorkshire) Ltd
173/179 Doe Quarry Lane
Dinnington
SHEFFIELD S31 7NL
Tel: Dinnington 564407/568881

M
Mr H A Scott
Owston Ferry 226
A Scott & Son
57 High Street
Owston Ferry
DONCASTER DN9 1RH
Tel: Owston Ferry 226

M
Mr L A Harnless
Mr P Sheffield
41 Grimsby Road
Cleethorpes
Tel: Cleethorpes 57371
Mr G J Williams  
(Trent Motors)  
43 Station Road  
SCUNTHORPE  
Tel: Scunthorpe 2028

C Bannister  
C Bannister & Son  
97 High Street  
Owston Ferry  
DONCASTER DN9 1RL  
Tel: Owston Ferry 227

F S Holloway  
Holloway Coaches Ltd  
Cottage Beck Road  
SCUNTHORPE DN6 1TP  
Tel: Scunthorpe 843153/865678

H Edwards  
Traffic Manager  
Cherry Coaches  
10-16 Norwood  
BEVERLEY  
North Humberside  
Tel: Beverley 882530

T W Graham  
Managing Director  
Connor & Graham Ltd  
High Street  
Easington  
HULL HU12 OTY  
Tel: Spurn Point 236

F Frances  
General Traffic Manager  
Frances Motors Ltd  
89 York Road Garage  
Market Weighton  
YORK YO4 3EB  
Tel: Market Weighton 72204

P Hunter  
General Manager  
Good News Travels  
Francis Street  
HULL HU2 8ES  
Tel: Hull 26755

C H C Phillips  
Chairman  
Phillips Coach Co Ltd  
Shiptonthorpe  
York YO4 3PU  
Tel: Market Weighton 73257
J H Thornes
J H Thornes (Coaches)
Derwent Garage
Bubwith
SELBY YO8 7LT
Tel: Bubwith 378

M S Ballinger
General Manager
Northern General Transport Co Ltd
117 Queen Street
GATESHEAD NE8 2UA
Tel: Dunston 605144

Mr E Brown
Eddie Brown Tours Ltd
Coach Garage
Helperby
YORK YO6 2NY
Tel: Helperby 222/3

H Foxton
Traffic Manager
York Pullman Bus Co Ltd
Bootham Tower
Exhibition Square
YORK YO1 2EW
Tel: York 22992/30983

J H Duff
Reliance Motor Services
Reliance Garage
Wigginton Road
Sutton-on-Forest
YORK YO6 1ES
Tel: York 768262

J A Webster
Traffic Manager
Primrose Valley Garage & Coach Co
Primrose Valley Road
FILEY YO14 9QG
Tel: Filey 512034

A V Simpson
Pennine Motor Services
Grouse Garage
Gargrave
SKIPTON
Tel: Gargrave 78215

S Barwick
Traffic Manager
Jaronda Travel
25 Park Lane
Barlow
SELBY YO8 8ES
Tel: Selby 618448
Mr R Braithwaite  
Traffic Manager  
Coastal & Country Coaches Ltd  
Crescent Avenue  
WHITBY YO21 3EW  
Tel: Whitby 602922

Mr R A Whittle  
Whittles Coaches  
Bridgnorth Road  
Highley  
BRIDGNORTH WV16 6JH  
Tel: Highley 861208

TAXI FIRMS

Manager  
Bramley Radio Cars  
28 Raynville Crescent  
Armley  
LEEDS  
Tel: Leeds 740139

Manager  
Central Radio Cars  
19 Midgley Terrace  
LEEDS  
Tel: Leeds 445877

Manager  
Farnley Cars  
Moor Side  
LEEDS  
Tel: Leeds 637676

Manager  
Gee Gee Cars  
Tudor House  
2 Beeston Park  
LEEDS 11  
Tel: Leeds 779889

Manager  
K K Kars  
54 North Parkway  
Seacroft  
LEEDS  
Tel: Leeds 730033
Manager
New Star
10 Wesley Street
Morley
LEEDS
Tel: Leeds 522222

Manager
A A A Private Hire
401 Gledhow Lane
LEEDS
Tel: Leeds 620481

Manager
Otley Private Hire
13 Wesley Street
OTLEY
Tel: Otley 463874

Paul Ripley
12 Winston Mount
LEEDS 6
Tel: Leeds 786750

Mr C Randall
16 Woodland Avenue
SWILLINGTON
Tel: Leeds 862634

Manager
Regal Private Hire
35 Crossgates Lane
Crossgates
LEEDS 15
Tel: Leeds 646132

Manager
Star Private Hire
307(a) Roundhay Road
LEEDS 8
Tel: Leeds 490099
Manager
Streamline Taxis
City Station
LEEDS
Tel: Leeds 443322

Manager
Telecabs
160 Town Street
LEEDS
Tel: Leeds 630404

Academic Institutions

Mr P Truelove
University of Aston
Dept of Civil Engineering
Costa Green
BIRMINGHAM B4 7ET
Tel: 021/359/3611 Ext. 5286

Dr G Lees
University of Birmingham
Dept of Transportation &
Highway Engineering
BIRMINGHAM B15 2TT
Tel: 021/472/1301 Ext. 3205

Prof. B P Hughes
Dept of Civil Engineering
P O Box 363
BIRMINGHAM B15 2TT
Tel: 021/472/1301

Dr R J Salter
University of Bradford
Dept of Civil Engineering
BRADFORD BD7 1DP
Tel: 0274/733466 Ext. 8225

Mr W J Williams
Brighton Polytechnic
Dept of Civil Engineering
Moulsecoombe
BRIGHTON BN2 4OT
Tel: 0273/693655 Ext. 2300
Dr A W Evans  
Bristol University  
School for Advanced Urban Studies  
Rodney Lodge  
Grange Road  
BRISTOL BS8 4EA  
Tel: 0272/741117

Mr C F Doubleday  
Cambridge University Engineering Dept  
Control & Management Systems Division  
Mill Lane  
CAMBRIDGE CB2 1RX  
Tel: 0223/66466 Ext. 387/262

Mr ISJ Dickins  
City of Birmingham Polytechnic  
Dept of Planning & Landscape  
E Block  
Perry Barr  
BIRMINGHAM B42 2SU  
Tel: 021/356/6911 Ext. 335

Mr M Roe  
City of London Polytechnic  
Dept of Transport Studies  
84 Moorgate  
LONDON EC2M 6SQ  
Tel: 01/283/1030

Mr D G Abraham  
City University  
Dept of Civil Engineering  
Northampton Square  
LONDON EC1V 0HB  
Tel: 01/253/4399 Ext. 3604

Dr J M Clark  
Cranfield Institute of Technology  
Centre for Transport Studies  
Cranfield  
Bed MK43 QAL  
Tel: 0234/752770

Dr J R Underwood  
Dundee College of Technology  
Dept of Civil Engineering  
Bell Street  
Dundee DD1 1HG  
Tel: Dundee 27225 Ext. 278

E S Armitage  
University of Dundee  
Dept of Civil Engineering  
University of Dundee  
Dundee DD1 4HN  
Tel: 0382/23181
Mr T T Gouruish  
University of East Anglia  
School of Economic & Social Studies  
NORWICH NR4 7TJ  
Tel: 0603/56161 Ext. 2074

Mr M C Forde  
University of Edinburgh  
Dept of Civil Engineering  
King's Buildings  
Mayfield Road  
EDINBURGH EH9 3JL  
Tel: 031/667/1081 Ext. 2384

Mr R H Hewitt  
University of Glasgow  
Dept of Civil Engineering  
Rankine Building  
GLASGOW G12 8LT  
Tel: 041/339/8855 Ext. 7212

Mr B Chandler  
Hatfield Polytechnic  
School of Natural Sciences  
College Lane  
HATFIELD  
Tel: 07072/68100 Ext. 238/312

Mr D A M Gilbert  
Imperial College of Science & Technology  
Dept of Civil Engineering  
Prince Consort Road  
LONDON SW7 2AZ  
Tel: 01/589/5111 Ext. 1369

Mr J Fawcett  
Kingston Polytechnic  
School of Civil Engineering  
Canbury Park Road  
Kingston Upon Thames  
Surrey KT2 6LA  
Tel: 01/549/0151 Ext. 272

Dr J Whitelegg  
University of Lancaster  
Dept of Geography  
Bailrigg  
LANCASTER LA1 4YR  
Tel: 0524/65201 Ext. 4953

Dr C Sharp  
University of Leicester  
Dept of Economics  
University Road  
LEICESTER LE1 7RH  
Tel: 0533/554455
Dr L J Mountain  
University of Liverpool  
Department of Civil Engineering  
P O Box 147  
LIVERPOOL  L69 3BX  
Tel: 051/709/6022

Prof. M E Beesley  
London Business School  
Sussex Place  
Regents Park  
LONDON  NW1 4JA  
Tel: 01/262/5050 Ext. 242

Dr S Glaister  
London School of Economics  
Centre of Urban Economics  
Houghton Street  
Aldwych  
LONDON  WC2A 2AE  
Tel: 01/405/7686 Ext. 534

Mr B G Ratcliffe  
Loughborough University  
Department of Transport Technology  
Leicestershire LE11 3TU  
Tel: 0509/263171 Ext. 470/336

Mr C E Banister  
University of Manchester  
Department of Town & Country Planning  
MANCHESTER  M13 9PL  
Tel: 061/273/3333 Ext. 3621

Dr C C Wright  
Middlesex Polytechnic  
Queensway  
ENFIELD  
Middlesex  EN3 4SF  
Tel: 01/804/8131

Mr G Hazel  
Napier College  
Department of Civil Engineering  
Colinton Road  
EDINBURGH  EH10 5DT  
Tel: 031/447/7070 Ext. 208

Mr F O Crouch  
University of Newcastle-Upon-Tyne  
Department of Civil Engineering  
Claremont Tower  
Claremont Road  
NEWCASTLE-UPON-TYNE  NE1 7RU  
Tel: 0632/328511 Ext. 2824
Dr P Davies
University of Nottingham
Department of Civil Engineering
University Park
NOTTINGHAM NG7 2RD
Tel: 0602/56101 Ext. 3536

Dr S Potter
The Open University
New Towns Study Unit
Walton Hall
MILTON KEYNES MK7 6AA
Tel: 0908/74066

Mr R Kilvington
University of Oxford
Transport Studies Unit
11 Bevington Road
OXFORD OX2 6NB
Tel: 0865/53101

Mr R Gray
Plymouth Polytechnic
Department of Shipping and Transport
Drake Circus
PLYMOUTH PL4 8AA
Tel: 0752/21312 Ext. 5500

Mr A Jessop
Polytechnic of Central London
Transport Studies Group
35 Marylebone Road
LONDON NW1 5LS
Tel: 01/486/5811 Ext. 351

Mr I G Cross
Portsmouth Polytechnic
Department of Civil Engineering
Barnaby Road
PORTSMOUTH PO1 3QL
Tel: 0705/827681 Ext. 511

Dr D G Powell
Queen Mary College
Department of Civil Engineering
Mile End Road
LONDON E1 4NS
Tel: 01/980/4811 Ext. 552

Prof. P G Hall
University of Reading
Department of Geography
Whiteknights
READING
Tel: 0734/875123 Ext. 7841
Berks RG6 2AB
Dr A F Sheer
Royal Holloway College
Department of Mathematics
Egham Hill
EGHAM
Surrey TW20 OEX
Tel: Egham 34455 Ext. 153

Dr G Edwards
Saint David's University College
Department of Geography
Lampeter
Dyfed SA48 7ED
Tel: 057/422351 Ext. 232

Dr D Maltby
University of Salford
Department of Civil Engineering
SALFORD M5 4WT
Tel: 061/736/5843 Ext. 7107

Dr R Ashworth
University of Sheffield
Department of Civil & Structural Engineering
Mappin Street
SHEFFIELD S1 3JD
Tel: 0742/78555 Ext. 5054

Dr M McDonald
University of Southampton
Department of Civil Engineering
Highfield
SOUTHAMPTON SO9 5NH
Tel: 0703/559122 Ext. 2192

Mr J M Aitken
University of Strathclyde
Department of Civil Engineering
48 Portland Street
GLASGOW G1 1XN
Tel: 041/552/4400 Ext. 3209

Mr P P Gardiner
University of Surrey
Department of Civil Engineering
GUILDFORD
Surrey GU2 5XH
Tel: 0483/71281 Ext. 368

Mr D J Leech
University College Swansea
Department of Management
Singleton
SWANSEA SA2 8PP
Tel: 0972/25678
Mr M Higginson
University of London
Department of Extra Mural Studies
Continuing Education Division
26 Russell Square
LONDON WC1B 5DQ
Tel: 01/636/8000 Ext. 3859

Prof. R E Allsop
University College London
Transport Studies Group
Gower Street
LONDON WC1E 6BT
Tel: 01/387/7050 Ext. 740

Dr M G Hartley
UMIST
Department of Electrical Engineering
& Electronics
Sackville Street
MANCHESTER M60 1QD
Tel: 061/236/3311 Ext. 2819

Mr A Moyes
University of Wales
Department of Geography
Penglais
Aberystwyth SY23 3DB
Tel: 0970/3111 Ext. 3304

Dr J G Hunt
UWIST
Department of Civil Engineering
King Edward VII Avenue
CARDIFF CF1 3NU
Tel: 0222/35691

Dr T H Thomas
University of Warwick
Department of Engineering
COVENTRY CV4 7AL
Tel: 0203/24011 Ext. 2122

Mr M J Smith
University of York
Department of Mathematics
Heslington
YORK YO1 5DD
Tel: 0904/59861 Ext. 5708

Mr J D Younger
Paisley College of Technology
Department of Civil Engineering
High Street
PAISLEY
Renfrewshire PA1 2BE
Tel: 041/887/1241
Dr B B Willetts
Aberdeen University
Department of Engineering
Marischal College
ABERDEEN AB9 1AS
Tel: 0224/40241

Dr C A Lewis
Exeter University
Department of Engineering Science
EXETER EX4 4QJ
Tel: 0392/77911

Prof. R B Schofield
Ulster Polytechnic
School of Civil Engineering
Shore Road
NEWTONABBEY
Co Antrim BT37 0QB
Tel: 0231/65131

Mr B W Preece
Wales Polytechnic
Department of Civil Engineering and Building
PONTYPRIDD
Mid-Glamorgan CF37 1DL
Tel: 0443/405133

Ms K McConnel
Central London Polytechnic
35 Marylebone Road
LONDON NW1 5LS
Tel: 01/486/5811

Mr R J M Harrison
Westminster College
Department of Engineering
Battersea Park Road
LONDON SW11
Tel: 01/720/2121

Mr G W Goodall
Brunel University
Department of Statistics & Operational Research
UXBRIDGE
Middlesex UB8 3PH
Tel: 0895/37188

Prof. A D Edwards
Herriot-Watt University
Department of Civil Engineering
Riccarton
EDINBURGH EH14 4AS
Tel: 031/225/8432
Mr C Sandell  
Sheffield City Polytechnic  
Department of Civil Engineering  
Pond Street  
SHEFFIELD S1 1WB  
Tel: 0742/760271

Dr G H Jamnejad  
Sunderland Polytechnic  
Department of Civil Engineering  
Benedict Building  
St George's Way  
SUNDERLAND SR2 7BW  
Tel: 0783/76231

Mrs P Cook  
Silsoe College  
Silsoe  
BEDFORD MK45 4DT  
Tel: 0525/60428

Mr A T Hawkins  
Thames Polytechnic  
Wellington Street  
LONDON SE18 6PF  
Tel: 01/854/2030

Mr A G G Law  
Teesside Polytechnic  
Department of Civil & Structural Engineering & Building  
MIDDLESBROUGH  
Cleveland TS1 3BA  
Tel: 0642/21812

Mr L McLeman  
Newcastle-Upon-Tyne Polytechnic  
Faculty of Construction and Applied Science  
Coach Lane Campus  
Coach Lane  
NEWCASTLE-UPON-TYNE NE7 7XA  
Tel: 0632/326002

Dr S K Al Naib  
North East London Polytechnic  
Department of Civil Engineering  
Longbridge Road  
DAGENHAM  
Essex RM8 2AS  
Tel: 01/599/0373

Mr P L Hickling  
Preston Polytechnic  
Corporation Street  
PRESTON PR1 2TQ  
Tel: 0772/22141
Pitman Correspondence College
Worcester Road
Wimbledon
LONDON SW19 7QQ
Tel: 01/947/6993

Rapid Results College
Tuition House
27/37 St. Georges Road
LONDON SW19 4DS
Tel: 01/947/2211

The Registrar
Cement and Concrete Association
Conference and Training Centre
Fulmer Grange
Fulmer
SLOUGH SL2 4QS
Tel: 02816/2727

Paul Fawcett
Manchester Open Learning
Central Manchester College
Cornbrook Centre
Barrack Street
MANCHESTER M15 4ER
Tel: 061/833/9858

Carol Ashley
Bolton Institute of Higher Education
Department of Civil Engineering
Deane Road
BOLTON BL3 5AB
Tel: 0204/28851 Ext. 217

Simon Jones
Fulmer Research Institute Ltd
Hollybush Hill
Stoke Poges
SLOUGH SL2 4QD
Tel: 02816/2181

Courses Department
Computational Mechanics Centre
Courses Department
Ashurst Lodge
Ashurst
SOUTHAMPTON SO4 2AA
Tel: Southampton 221398

Mr P H Allen
British Constructional Steelworks Association Ltd
92-96 Vauxhall Bridge Road
LONDON SW1V 2RL
Tel: 01/222/2254
The Secretary
Fort Bovisand Underwater Centre
Plymouth Ocean Projects Ltd
Fort Bovisand
PLYMOUTH
Devon PL9 OAB
Tel: 0752/48021

Mr H Canning
Tarmac Construction Ltd
Construction House
Birch Street
WOLVERHAMPTON WV1 4HY
Tel: 0902/22431

Mr R W Brighton
Time Manager International
50 High Street
Henley-in-Arden
SOLIHULL
West Midlands B95 5AN
Tel: 05642/2312

Mr J Rowlinson
College of Management
Dunchurch
RUGBY
Warwickshire CV22 6QW
Tel: Rugby 810656

Mrs J V Neale
The Survey Centre
Surveying Training Ltd
Waterworks Road
WORCESTER WR1 3EZ
Tel: 0905/21073

The Registrar
Urwick Management Centre
Baylis House
Stoke Poges
SLOUGH SL1 3PF
Tel: Slough 34111

Ms K Sherlock
C T A Services
2-4 Wood Street
Old Town
SWINDON
Wiltshire SN1
Tel: 0793/610506

Mrs S Philips
The Certified Accountants
Educational Trust
P O Box 244
LONDON WC2A 3EE
Tel: 01/242/6855
Mrs D Martin
Training Section
Transport and Road Research Laboratory
Department of Environment & Transport
Old Wokingham Road
Crowthorne
Berkshire RG11 6AU
Tel: Crowthorne 773131

Ms K M Griffiths
Course Organiser
ADVISA Research & Consult. Servs.
Bloreenge House
32a Frogmore Street
Abergavenny
Gwent NP7 5AL
Tel: 0873/78840

PICKUP Directory
Guildford Educational Services Ltd
164 High Street
Guildford
Surrey GU1 3HW
Tel: 0483/587/9454

J F Hooper
(Secretary)
Transport Tutorial Association
P O Box 4UZ
London W1A 4UZ
Tel: 01/631/3833

E Davies
Managing Editor
Traffic Engineering & Control
29 Newman Street
London W1P 3PE
Tel: 01/636/3956/7

Road Transport Industry Training Board
Capitol House
Empire Way
Wembley HA9 ONG
Tel: 01/902/8880
Dr J R Duffell
Hatfield Polytechnic
Department of Civil Engineering
College Lane
HATFIELD
Tel: 07072/68100 Ext. 238/312

Mr L English
West Yorkshire Passenger Transport Executive
1 Swingate
LEEDS LS1 4DQ
Tel: Leeds 451601

Directorate of Development Services
Engineering Division
Traffic and Road Safety Section
1 City Road
BRADFORD BD8 8ER