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**Monograph:**

Turvey, I.G. (1987) *Training Requirements to Enable Transport Planners, Engineers and Operators to Respond to the Challenge of Legislative Change*. Working Paper. Institute of Transport Studies, University of Leeds, Leeds, UK.

Working Paper 234

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### **Published paper**

Turvey, I.G. (1987) *Training Requirements to Enable Transport Planners, Engineers and Operators to Respond to the Challenge of Legislative Change*. Institute of Transport Studies, University of Leeds. Working Paper 234

Working Paper 234

January 1987

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

I G Turvey

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## A B S T R A C T

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)     | Institution of Civil Engineers  |
| Mr. T.D. Bilham             | University of Leeds             |
| Prof. A.D. May              | University of Leeds             |
| Mr. I.G. Turvey             | University of Leeds             |
| Mr. R. Bell                 | Department of Transport         |
| Mr. D. Hardy/Mr. G. Ingle   | PICKUP Representative           |
| Mr. K. Hodgson              | West Riding Automobile Co. Ltd. |
| Mr. W.E.A. Ixer             | Sheffield City Council          |
| Mr. M. Noble                | Calderdale D.C.                 |
| Mr. M. O'Shea/Mr. D. Naylor | Manpower Services Commission    |
| Mr. D. Rees                 | Leon Motor Services             |
| Mr. D. Wears                | West Yorkshire P.T.E.           |
| Mr. D. Wilson/Mr. B. Dean   | 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:
  - o National, regional and urban planning and design
  - o Traffic and transport planning and operations
  - o Highway planning, design and maintenance
  - o 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.
- 2) A news item in 'Traffic Engineering and Control' early in 1987.
- 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

| Organisation                                 | Topic           |              |              |   |  |                |                                     |                                |   |                 |                     |             |                    |                                      |
|--|-----------------|--------------|--------------|---|--|----------------|-------------------------------------|--------------------------------|---|-----------------|---------------------|-------------|--------------------|--------------------------------------|
|  | Nos. approached | % responding | Deregulation | T.P.P.<br>Transport Policy<br>Transport Legislation | Professional<br>Development/Management | Expert Systems | Presentation at<br>Public Enquiries | Courses for<br>Elected Members | Traffic Management/<br>Restraint (incl.<br>micro systems) | Data collection | Analysis/statistics | Forecasting | Computing/graphics | Attitudinal /<br>behavioural surveys |
| Metropolitan<br>Districts (SY)               | 4               | 100          | ✓            | ✓   |  |                |                                     | ✓                              |   | ✓               | ✓                   | ✓           |                    |                                      |
| Metropolitan<br>Districts (WY)               | 5               | 100          | ✓            | ✓   | ✓                                      | ✓              |                                     | ✓                              | ✓   | ✓               | ✓                   | ✓           |                    |                                      |
| Metropolitan<br>Districts (T&W)              | 5               | 60           |              | ✓   |  |                |                                     |                                |   |                 | ✓                   |             |                    |                                      |
| Metropolitan<br>Districts (GM)               | 10              | 70           |              | ✓   |  |                | ✓                                   | ✓                              |   |                 |                     | ✓           |                    |                                      |
| Shire Counties *                             | 2               | 100          | ✓            | ✓   |  |                | ✓                                   |                                |   |                 |                     |             |                    |                                      |
| Transport<br>Consultants<br>(SY,WY)          | 9               | 56           | ✓            |   |  | ✓              | ✓                                   |                                | ✓   | ✓               | ✓                   | ✓           | ✓                  | ✓                                    |
| Private Bus<br>Operators<br>(SY, WY, Shire*) | 37              | 21           |              |   |  |                |                                     |                                |   |                 |                     |             |                    |                                      |
| P.T.E.s                                      | 2               | 100          | ✓            |   | ✓**                                    |                |                                     |                                | ✓   |                 |                     |             |                    | ✓                                    |
| N.B.C. Subsidiaries                          | 6               | 100          | ✓            |   |  |                |                                     |                                |   |                 |                     |             |                    |                                      |
| Municipal<br>Operators*                      | 2               | 100          | ✓            |   |  |                |                                     |                                | ✓   |                 | ✓                   |             |                    |                                      |

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 nationwide 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

TRANSPORTATION RESEARCH BOARD (1985): Transportation Education and Training: Meeting the Challenge. Proceedings of the Conference on Surface Transportation Education and Training. Williamsburg, Virginia. October 28-31, 1984.

MANPOWER SERVICES COMMISSION (1986): LCPs - Designed to Help Your Business Grow. HMSO, London.

MAY, A.D. (1982): Universities Transport Study Group: Review of Masters Courses. Institute for Transport Studies Working Paper 165. University of Leeds.

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APPENDIX 2:

INSTITUTE FOR TRANSPORT STUDIES  
UNIVERSITY OF LEEDS

- SHORT COURSE BROCHURE 1986/7

### **DATES FOR YOUR DIARY**

#### **TRANSPORT POLICY FORMULATION AND ASSESSMENT**

7-9 January 1987

29 June - 2 July 1987

#### **TRAFFIC ASSIGNMENT MODELS: RECENT ADVANCES**

19-21 January 1987

23-25 September 1987

#### **BASIC STATISTICS FOR TRAFFIC AND TRANSPORT**

19-21 January 1987

2-4 September 1987

#### **ACCURACY ESTIMATION AND COMBINATION OF TRIP MATRICES**

2 June 1987

#### **ECONOMIC EVALUATION IN TRANSPORT PLANNING**

22-24 April 1987

21-23 September 1987

#### **TRIP MATRIX ESTIMATION AND VALIDATION**

3-5 June 1987

Further information on all the courses may be obtained from:

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**INSTITUTE FOR  
TRANSPORT  
STUDIES**

**COURSES FOR  
TRANSPORT ENGINEERS,  
PLANNERS AND  
OPERATORS**



**CONTINUING EDUCATION  
AT LEEDS**



## **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 COBA9 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.

TRAINING NEEDS IN METROPOLITAN DISTRICTS / CONSULTANTS

/BUS INDUSTRY

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 DLO
  - Computer support
  - Marketing/publicity of public transport
  - Materials testing
  
6. Other Functions

PUBLIC TRANSPORT FUNCTIONS

STAFF:

Prof. Tech.

1. Service coordination and management.

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- 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.

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- 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.

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- T.P.P. input.
- Development control issues.
- Liason with other bodies.

4. Traffic management and control.

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

5. Finance and administration.

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

6. Maintenance.

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- Bus vehicles.
- Bus garages.
- Rail rolling stock.

7. Equipment and infrastructure.

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- 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

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