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**OVERVIEW**

The Institute of Transport Studies (ITS) was established in January 1991 within the Graduate School of Business. In 1993, the Graduate School was restructured into two administrative units. One of these is the Transport Studies Unit, headed by Professor David Hensher. It includes the Institute of Transport Studies and all academic staff teaching in the transport management program. The Institute of Transport Studies is primarily a research body complementing the transport management program offered within the School.

ITS forms a link in a triangle of international transport research centres. ITS has a formal association with the Institute for Transport Studies at the University of Leeds and the Institute of Transportation Studies at the University of California (Berkeley and Irvine campuses).

Highlights of 1993 at ITS included:

- **Research**: major new research project evaluating strategies to reduce greenhouse gas emissions from urban passenger transport

- **Education**: continuing strong demand for the transport management program and the Certificate of Transport Management; a new subject, Freight Operations and Management, introduced in 1993

- **Training**: several successful short courses were presented (Conjoint analysis, LIMDEP and Structural equations)

- **Publications**: extensive publications including journal articles, conference proceedings and 18 working papers

- **Public profile**: presentations by leading industry professionals at the weekly Transport Policy Workshop forum; publication of papers in *Transport Policy Perspectives '92* book

- **Conferences**: hosting of the inaugural National Conference on Tourism Research

- **Participation**: presentations and attendance at local and international functions; David Hensher joint chair of International Conference on Surface Passenger Transport In Canada

- **Fellowships**: David Hensher honoured as a Fellow of the Australian Institute of Traffic Planning and Management, and Paul Hooper honoured as a Fellow of the Chartered Institute of Transport
OBJECTIVES

The objectives of the Institute, formed when ITS was established, are listed below, together with a comment on how each objective was achieved in 1993.

- To offer an interdisciplinary environment in which University and other specialists can join forces to address contemporary transport problems.

The varied backgrounds of ITS staff include economics, science, geography, computing and operations research, contributing to a multidisciplinary environment. Staff worked with specialists outside the University on several projects.

- To undertake research, training and education in transportation with particular emphasis on economics, management, financing, planning and evaluation.

Research activities in 1993 and the range of subjects offered in the transport management program highlight the Institute's commitment to these aspects of transport management.

- To encourage and provide the resources for graduate research study in transport.

ITS has an extensive PhD program, with both full-time and part-time students working on a wide range of topics.

- To act as a focus within the University of Sydney for research in transport, co-ordinating projects, and providing a continuing basis of academic support.

ITS is the largest body of transport academic and research staff in the University environment.

- To increase public interest in the subject, reinforcing the University of Sydney's established name for excellence, and to develop sources of income for the Institute through the establishment of a series of coordinated short courses, sponsorships, consultancies and related activities.

Public interest is attracted through the Transport Policy Workshop weekly forum, and also through a program of short courses. Sources of income in 1993 included research consultancies, training and short courses, publications and donations.
- Institute of Transport Studies 1993 Annual Report -

- To attract outside funding for research and for related activities, including scholarships, visiting and research associate programs, conferences and seminars.

A number of research and administrative positions in ITS are funded by income from external sources. In 1993, outside funding was attracted to support a program of visiting fellows at ITS in 1994: the Chartered Institute of Transport Fellow (1994), and the annual Collex Visiting Fellow in Freight Transport and Logistics.

- To develop a publishing program to support the research initiatives in transport and to promote interdisciplinary contributions.

In 1993 ITS had an extensive internal publishing program of working papers, research reports and the Transport Policy Workshop book. ITS staff also published in peer-reviewed journals and conference proceedings. Several publications were co-authored by non-ITS staff, promoting interdisciplinary interaction.
Institute of Transport Studies staff are listed below.

**Academic and research staff**

*David Hensher*, BCom (Hons) PhD, FCIT AICPA CPA Aust FAITPM
Director, ITS
Director, PhD Program
Professor of Management

*Paul Hooper*, BCom (Hons) MTransEc, FCIT
Deputy Director, ITS
Senior Lecturer in Transport Management

*Narinda Smith*, BSc (Hons) PhD
Director, Transport Management Program
BCA (NSW) Senior Lecturer in Transport Management

*Helen Battellino*, BCom BA MTEc, MCIT MMRSA
Director, Non-Award Program
Lecturer in Transport Management

*William Zhu*, BSc MSc PhD
Research Fellow

*Frank Milthorpe*, BSc
Principal Systems Analyst

*Rhonda Daniels*, BSc (Hons)
Research Analyst (until April)

*Timothy Raimond*, BSc (Hons)
Research Analyst

*Michael Lowe*
Computer Officer (trainee) (from August)

**Administrative staff**

*Darrel Riley*
Administrative Officer

*Joanne Rigg*
Administrative Assistant
Tanja Wieringa  
Administrative Assistant

Colette Vella  
Administrative Assistant (part-time)

Full-time PhD students

Ilker Altipoglu  
Rhonda Daniels  
Rod Katz  
Anne Lemaitre  
Ajay Nayyar  
Michael Nyathi  
Jianlin Xu

Visiting staff

William G. Waters II, BA MA PhD, MCIT  
Visiting Professor (University of British Columbia)  
(August 1992 — March 1993)

Marcus Wigan, MA DPhil MBA MA, FCIT FIEAust  
Professor of Management (fractional)
New research projects in 1993 included:

**Greenhouse gas emissions**

ITS has been awarded a major study by the Bureau of Transport and Communications Economics to investigate urban travel behaviour as part of the Federal Government's commitment to reduce greenhouse gas emissions. The primary output of the study will be a strategy simulator. The simulator will allow the effects of different policies and combinations of strategies for reducing greenhouse gas emissions from urban passenger transport to be evaluated. Data for model development will be collected in telephone surveys and face-to-face interviews with residents in capital cities. The study complements the PIMMS project at ITS, and the work of several PhD students.

**Productivity of urban bus operations**

As part of the Industry Commission's Inquiry into Urban Transport, ITS conducted a study on the productivity of urban bus operations, using Total Factor Productivity Indices. Data on inputs and outputs to bus operations were collected from all public bus operators in Australia and from a sample of private operators in 3 capital cities (Sydney, Melbourne and Brisbane). The study compared the efficiency of the public and private sectors and examined the impact of institutional and regulatory constraints on performance.

**Mercedes-Benz performance benchmarking program**

The study on performance measurement in the bus and coach industry conducted for the Industry Commission's Inquiry into Urban Transport is being continued as the Mercedes-Benz Performance Benchmarking Program. Data on 1992/93 operations are being collected from a nationwide sample of bus and coach operators.

**Cyclist law compliance**

ITS conducted the fourth survey in a series of observational studies of cyclists in both city and rural areas on roads, at recreational sites and riding to school. Cyclists were observed at 76 sites all over NSW in April. The survey noted numbers of cyclists, their compliance with helmet regulations and general law compliance. The study was commissioned by the Roads and Traffic Authority.
Bicycle market in Adelaide

ITS conducted a study of the market for bicycles in Adelaide, including potential use of bicycles, jointly funded by the South Australian Department of Road Transport, the Office of Transport Policy and Planning, and the Office of Energy Planning. The research included a review of available data, interviews with experts in South Australia and recommendations for future work.

Economic significance of Sydney airport

A study for the Federal Airports Corporation on the economic significance of Sydney (Kingsford Smith) airport involved a major survey of organisations having some direct relationship with the airport or the traffic that passes through it. The report examined flow-on effects on employment and output in the remainder of the economy, but it emphasised the role of an efficient and effective air transport service in an economy seeking to expand its export markets.

Journey to work survey

ITS provided advice to the CSIRO on the journey to work data from the 1991 census and advice on the development of an employee survey to examine the relationship between the journey to work, residential location and work location.

Pricing of new country rail services

A survey instrument was designed for Countrylink by ITS in order to determine elasticities of demand for new rail services to be introduced in country areas. The survey was designed as a stated choice experiment to assist in pricing of new Xplorer and XPT services.

Community benefits from rail services

ITS performed a study for CityRail to assist CityRail in the establishment of a methodology for valuing the benefits the community receives from rail passenger services. The study looked at the economic cost and benefits of rail services to the community under a number of different scenarios.

Destination choice modelling

The Bureau of Tourism Research engaged ITS to provide modelling advice on the development of a destination choice model for inbound and outbound tourists.
Projects continuing from 1992 included:

**Non-motorised transport demand**

The 3 year non-motorised transport project funded by the Roads and Traffic Authority is in its second year. The project will provide valuable information on pedestrian and bicycle activities in NSW and produce a model of non-motorised travel demand. Funding for the program includes a Visiting Professor, Marcus Wigan, and a PhD scholarship awarded to Roderick Katz who commenced in January 1993.

**PIMMS (Pricing and Investment Model for Multi-modal Systems)**

The PIMMS project is being funded by the Australian Research Council over 3 years. The aim of the project, now in its second year, is to develop a new system to improve the current procedures for assessing and evaluating transport infrastructure projects. Funding provides for a Research Fellow, Dr William Zhu. The new approach to evaluation will emphasise and incorporate individual level travel decision-making, rather than follow the traditional 4 step modelling approach. An Important aspect of the project is the inclusion of the costs of externalities into the evaluation process and the development of valuation functions for externalities.

**Shellharbour transport monitoring**

ITS has been monitoring the implementation of demand responsive bus services (call-buses) to provide route flexibility in regular bus services in a non-metropolitan urban area. The research involves monitoring patronage and revenue, on-board bus surveys and non-user surveys to determine reactions to the innovative service, financial assessment, and documentation of the demonstration program. A cost-benefit analysis of the project is being completed. As part of this project, a software program to analyse patronage analysis data from electronic ticketing systems (PASET) has been developed by William Zhu.

**Urban public transport demand model**

The Australian Research Council is funding research to develop a dynamic model of urban public transport demand. Funding provides for a PhD student, Ilker Altinoglu, who is now in his second year. A model framework has been devised and cohort structures developed to allow comparison of 1971, 1981 and 1991 transport survey data.
Bus cost and revenue models

The aim of this project for the State Transit Authority, the government bus operator, is to provide management with a better understanding of the costs of providing services at the route level, and link costs to the revenue earned from each service. This will enable the profitability of each bus route to be determined, and aid in negotiations over community service obligation payments. The cost and revenue models being developed will help management make more informed decisions, as they will understand the costs at the level at which services are provided. In 1993, progress was made towards implementation of the models.

Other projects

Other research projects in 1993 included:

- a review of bicycle safety research in Australia, as part of a worldwide project by the US Department of Transport;
- a review of literature on heliports; and
- an update of the Factsheet pamphlet on the private bus and coach industry for the Australian Bus and Coach Association.

Research compendium

Details of current and recent ITS research projects were reported in the Compendium of Australian Research into Transport and the Urban Environment, published by the Bureau of Transport and Communications Economics in early 1993.
EDUCATION

PhD program
ITS has a strong PhD program with 7 full-time and 6 part-time students in 1993. PhD research covers a wide range of transport management issues. Students with year of commencement and topic are listed below.

Full-time:
- Ilker Atinoglu (1992) A dynamic model of demand for urban public transit
- Rhonda Daniels (1993) Valuation of environmental impacts of transport projects
- Rod Katz (1993) Non-motorised transport demand model
- Anne Lemaitre (1992) Choice of performance measurement for airports
- Ajay Nayyar (1993) Trip timing model
- Michael Nyathl (1992) Strategic alliance partner choice in international aviation networks
- Jianlin Xu (1993) Geographic Information Systems for transport route service planning

Part-time:
- Seu Cheng (1992) International air freight
- Ian DeMellow (1991) Total Factor Productivity of the NSW railways
- Paul Hooper (1990) Demand for packaged travel
- Vicki LePlastrier (1992) Airline carrier choice decisions
- Tim Raymond (1993) Dynamic modelling of workplace and residential location choice behaviour
- Salih Sullemian (1992) Site selections for major events such as the Olympics

Transport Management program
The Transport Management program at the Graduate School of Business includes the Master of Transport Management and the Graduate Diploma of Transport Management. Seventy-five students were enrolled in 1993. The program received two inaugural Orient Airlines scholarships for Masters students which were awarded to Alice Chan and Jenny King. Students in the Transport Management program benefit from ITS research and expertise through the following courses:
Semester 1:
Quantitative Analysis
Transport Economics and Management
Transport Planning Methods
Transport Policy Workshop I
Logistics Management
Tourism Management

Semester 2:
Freight Operations and Management (new in 1993)
Marketing Research Methods and Analysis
Transport Policy Workshop II
Transport Strategy
Urban Public Transit Management

Elective subjects in the Transport Management program are available as non-award subjects. There were 28 non-award students in 1993.

Awards

Awards for 1993 were presented at an end-of-year dinner attended by students, staff and members of the ITS Advisory Committee. The Chartered Institute of Transport prizes for the best students in the Master of Transport Management program were awarded to Timothy Rogers (best first year student — the Ken Hillyar award) and to Matthew Stephens (best second year student — the Sir Hudson Fysh award). The Australian Institute of Traffic Planning and Management prize for the most meritorious student in the Graduate Diploma program was awarded to Robert Henderson. The Institute of Transport Studies prize for excellence in full-time study was awarded to Alice Chan and Jenny King.

Transport Policy Workshop forum

The success of the subject Transport Policy Workshop, a weekly forum, has continued in 1993. Leading transport industry professionals presented a range of industry perspectives to students and interested members of the public. The forum promotes discussion of current transport policy issues. A selection of papers is published in the annual TPW book.

1993 Transport Policy Workshop speakers are listed on the following page.
Semester 1:
Phillip Clarkson Managing Director, Cronulla Carrying Co.
Dr Robert Jones Inquiry Manager, Industry Commission
Gerry de Graaf General Manager, Jetroad
Professor Ken Ogden Monash Transport Group, Monash University
Ron Finemore Managing Director, Finemore Holdings
Dr Fred Affleck General Manager Corporate Affairs, National Rail Corporation
Robert Leece General Manager, Transfield Projects
Rod Gilmour Executive Director, Vehicle Transport, NSW Department of Transport
Professor Igor Kiselev Railway University of St Petersburg
Professor Marcus Wigan Visiting Professor, Graduate School of Business
Vince Graham Executive Director, National Rail Corporation
Professor John Black Head, School of Civil Engineering, University of NSW

Semester 2:
Russell Smith Senior Research Officer, Port of Melbourne Authority
Len Harper CEO, State Transit Authority
Bernard Fisk CEO, Roads and Traffic Authority
Dr Peter Forsyth Senior Lecturer, Department of Economics, Australian National University
Christopher Jay Managing Director, Plandice
Ron Bruce Manager, Tangara Trains
Doug Dean Managing Director, Collex Waste Management
Dr Ross Robinson Director, Centre for Transport Policy Analysis, Wollongong University
Dale Budd Director, Dale Budd and Associates
Dick Bullock Director, Travers Morgan
Sam Burgess Chairman, NSW Section of Chartered Institute of Transport
Richard Cardew Director, Graduate School of the Environment, Macquarie University

Certificate of Transport Management

The Certificate of Transport Management (Bus and/or Coach) course was established by the Graduate School of Business in conjunction with the Bus and Coach Association as part of the managerial training standards required for all accredited bus and coach operators under the 1990 NSW Passenger Transport Act. The course, fully booked until 1996, is presented over six weekends.
Two CTM courses were held in 1993, with a total of 120 students. Graduates of the 1992 courses were presented with their Certificates at a dinner held in July at which the guest speaker was Brian Langton, NSW Shadow Minister for Transport.

A new course, a Certificate of Coach Management (CCM), has been developed during 1993 and will be offered for the first time in 1994. The CCM will be presented over two weekends and is specifically designed for operators accredited for long distance and tourist vehicle services (including overnight charter work).

Short courses

**Structural equations short course**

Professor Tom Golob of the University of California, Irvine presented a three day short course at ITS in June titled Structural Equation Modelling in Transportation Research. The workshop provided practical examples of applications of structural equation modelling, attitude behaviour modelling and traffic safety analysis. Participants were introduced to LISREL and PRELIS software packages.

**LIMDEP short course**

LIMDEP software developer Professor Bill Greene, of New York University, presented a four day short course in July at ITS on the practical application of this powerful econometric software package.

**Conjoint analysis workshop**

The Understanding Customer Decision Making (Conjoint Analysis) short course was presented in August 1993, following the success of the inaugural course in 1992. Professor David Hensher, Professor Jordan Louviere (Universities of Utah and Alberta), Professor Al Shacker (University of Minnesota) and Professor John Roberts (Australian Graduate School of Management, UNSW) presented the four day workshop in conjoint analysis and discrete choice modelling, important techniques in transportation and marketing research. Participants learnt about current developments in the field and gained practical experience in the use of key software packages.
Publications

The results from research and consulting activities are communicated to a wide audience in the transport industry and beyond in several ways: through publishing, participation at conferences and seminars and through other activities. ITS has an extensive publishing record, through its own internal program and in external publications. Publications in 1993 are listed in this section.

Note: * indicates non-ITS author

Books


Policy Perspectives '92 is the second volume in the TPW series. It is a collection of addresses given at the Institute of Transport Studies' weekly Transport Policy Workshop in 1992. The book also contains student reviews of the papers. The volume is a significant contribution to the transport debate in Australia.


Journal articles and conference proceedings


- *Bowyer, D. and Hooper, P. (1993) Forecasting tourism travel on rural roads, Papers of the 18th Australasian Transport Research Forum 18 (1), 225-244


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ITS Working Papers and Research Reports

Conference and Journal papers are often initially published as ITS Working Papers.

ITS-WP-93-1  Hazard-Based Duration Models and Their Application to Transportation Analysis (Hensher and "Manning")
ITS-WP-93-2  Vehicle Replacement Costing with Age and Budget Constraints (Hensher and Zhu)
ITS-WP-93-3  Economic Reward and On-road Performance of Long Distance Trucking: An Econometric Assessment (Hensher, Battellino and Daniels)
ITS-WP-93-4  Light Rail and Bus Priority Systems: Choice or Blind Commitment? (Hensher and Waters)
ITS-WP-93-6  Stated Preference Analysis of Travel Choices: The State of Practice (Hensher)
ITS-WP-93-7  Crew Size Determination for Terminal Queuing Operation of a Bus Route (Zhu)
ITS-WP-93-8  The Transportation Sector: Economic Issues and Challenges for the Nineties (Hensher)
ITS-WP-93-9  Trip Frequency Scheduling for Terminal Queuing Bus Routes (Zhu)
ITS-WP-93-10 Using Total Factor Productivity and Data Envelopment Analysis for Performance Comparisons Among Government Enterprises: Concepts and Issues (Hensher and Waters)
ITS-WP-93-11 The Transport Disadvantaged -- Community Transport or Mainstream? (Battellino and Hensher)
ITS-WP-93-12 Approaching an Airline Network Model of Competitive Strategy in International Aviation: A Conceptual Framework (Nyathi)
ITS-WP-93-13 Local Urban Bus Services: Natural Monopoly and Benchmark Contestability (Hensher)
ITS-WP-93-14 A Review of Recent Bicycle Related Safety Research in Australia (Katz and Smith)
ITS-WP-93-16 Forecasting Tourism Travel on Rural Roads (*Bowyer and Hooper)
ITS-WP-93-17 The Value of Travel Time Savings and the Link with Income: Implications for Public Project Evaluation (Waters)
ITS-WP-93-18 Variations in the Value of Travel Time Savings: Empirical Studies and the Values for Road Project Evaluation (Waters)
Project Reports

- **Hellport Literature Search: Noise Standards in Other Jurisdictions and Economic and Social Benefits**, Report prepared for the Department of Transport (Marine and Air Division), February (Hooper and Raimond)

- **Contestability of Local Bus Markets**, Report prepared for the Bus and Coach Association (NSW), March (Hensher)

- **Comparison of Bus Route Service Provision and Minimum Service Levels**, Report prepared for the State Transit Authority of NSW, April (Milthorpe)


- **An Observational Survey of Law Compliance and Helmet Wearing by Bicyclists in NSW**, Report prepared for the Roads and Traffic Authority of NSW, June (Smith and Milthorpe)

- **Performance Indicators and Total Factor Productivity for Group 1 Airports: An Assessment of the Prices Surveillance Authority Draft Report**, Report prepared for the Federal Airports Corporation, July (Hensher)

- **Economic Significance of Sydney (Kingsford Smith) Airport**, Report prepared for the Federal Airports Corporation, September (Hooper, *Lang, *Cain and *Dickinson)

- **A Bicycle Market Study, South Australia**, Report prepared for the SA Department of Road Transport, the Office of Transport Policy and Planning and the Office of Energy Planning, September (Smith and Wigan)

- **Analysis of Passenger Revenue by Bus Route**, Report prepared for the State Transit Authority of NSW, October (Milthorpe)

- **Valuing the Benefits the Community Derives from CityRail Services**, Report prepared for the State Rail Authority, November (Milthorpe, Hensher and Zhu)
Reports prepared for the Greenhouse Gas Emissions project:
  (Also published in December 1993 as BTCE Occasional Paper 108)

Reports prepared for the Non-Motorised Transport project:
- *NMT-93-R1 Year 1 Progress: ITS/RTA Non-Motorised Transport Project*, June (Smith)
- *NMT-93-R2 Bicycles and Pedestrians — What Do We Need to Know?*, December (1992) (Smith and Wigan)
- *NMT-93-R3 PhD Progress Report: ITS/RTA Non-Motorised Transport Project*, June (Katz)
- *NMT-93-R4 Survey of Local Government Information Holdings*, May (Katz and Raimond)
- *NMT-93-R5 Ask the Bicycle Experts: A Series of Interviews*, (In progress) (Smith, Katz and Wigan)
- *NMT-93-R6 Data Audit and Resource Specifications*, June (Wigan)
- *NMT-93-R7 Facts about Bicycles in NSW*, June (Milthorpe, Smith and Wigan)
- *NMT-93-R8 Facts about Walking*, August (Milthorpe, Smith and Wigan)
- *NMT-93-R10 Cycling on Footpaths: Issues and Evidence*, December (Katz)
PARTICIPATION

In 1993, staff made presentations and attended conferences and industry functions, both locally and internationally, to discuss ITS research activity and exchange ideas.

Conferences chaired

• Urban Freight — Implications for Transport Policy and Planning (IIR Conference) (Day 2), Sydney, 20-21 September (Hooper)

• Joint chair, 3rd International Conference on Competition and Ownership in Surface Passenger Transport, Toronto, Canada, 26-29 September (Hensher)

• Session on Transport Planning Studies, 18th Australasian Transport Research Forum, Gold Coast, 29 September-1 October (Hooper)

Papers and presentations

Note: P = presenter

• Building a research base in tourism: some lessons and challenges in the field of travel behaviour, Keynote address to National Conference on Tourism Research, Sydney, 19 March (Hensher)

• Light rail or bus priority systems: choice or blind commitment?, Urban Transport (IIR Conference), Sydney, 22-23 March (Hensher, Waters)

• Total Factor Productivity and Data Envelopment Analysis, Address to National Road Transport Commission, Melbourne, 15 April (Hensher)

• Transport, Economic Society of NSW Seminar on Economic Issues, Sydney, 16 April (Hensher)

• The future of public transport, Interview with Stan Grant on 11AM (Channel 7), 30 April (Hensher)

• Regulation, deregulation and marketing in the long distance coach industry, Guest lecture to UTS (Ku-ring-gai) Tourism Management students, 3 May (Battellino)

• Don’t miss the bus — marketing bus services, Australian Bus and Coach Association Conference, Gold Coast, 11 May (Battellino)

• What’s happening out there? The economy, shippers, the competition and government, Invited address to Long Distance Road Transport Association Annual General Meeting, Wollongong, 15 May (Hooper)

• Bus priority systems vs light rail transit, NSW Bus Priority Task Force meeting, 19 May (Hensher)
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- Natural monopolies and contestability of local bus services, Address to Bus and Coach Association of NSW, 31 May (Hensher)

- Graduate management education — what does it offer?, Address to Logistics Management Association meeting, Sydney, 16 June (Smith)

- Benchmarking, Address to Economic Society, 24 June (Hensher)

- Address to Urban Bus Productivity Forum, Industry Commission, 20 July (Hensher)

- Tollroads and financing private infrastructure, Seminar at University of British Columbia, Canada, 23 September (Hensher)

- Discrete choice analysis, Workshop at University of British Columbia, Canada, 24 September (Hensher)

- 3rd International Conference on Competition and Ownership in Surface Passenger Transport, Toronto, Canada, 26-29 September

  Plenary paper on Light rail transit vs bus priority systems and Rapporteur for Workshop on Infrastructure Planning (Hensher)

  Transport disadvantaged: mainstream or not? (Battellino, Hensher)

  Measuring bus patronage (Smith, presented by Battellino)

- 18th Australasian Transport Research Forum (ATRF), Gold Coast, 29 September-1 October

  Forecasting tourism travel on rural roads (*Bowyer, Hooper*)

  An overview of PIMMS: an areawide urban transport policy evaluation model (Hensher, Waters, Zhu, Daniels) (nominated for John Taplin prize for best paper)

  Approaching an airline network model of competitive strategy in international aviation: a conceptual framework (Nyathi) (nominated for John Taplin prize for best paper)

- Stated preference modelling: state of practice, Seminar at Centre de Recherches des Transports, University of Montreal, Canada, 1 October (Hensher)

- Stated choice modelling, Seminar at McGill University, Montreal Canada, 2 October (Hensher)

- Transport choices in logistics, Guest lecture in Effective Logistics Management program at Australian Graduate School of Management, University of NSW, 6 October (Hooper)

- Crew size determination for terminal queuing operation of a bus route, 35th Transportation Research Forum, New York, 14-16 October (Zhu)

- Panel data, event histories and dynamic choice models in tourism research, National Conference on Forecasting in Tourism (organised by ACT Tourism Services and Bureau of Tourism Research), Canberra, 25-26 November (Hensher)
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- Greenhouse gas emissions project: Location, travel and vehicle choice modelling system, Environmental Challenges in Land Use Transport Coordination (Special Interest Group 1 of the World Conference of Transport Research), CSIRO, Blackheath, 7-9 December (Hensher, Milthorpe, Zhu)

- 15th Conference of Australian Institutes of Transport Research (CAITR), Melbourne, 9-10 December
  Using cohorts in long term dynamic modelling of transport demand (Atinoglu)
  Valuing environmental impacts of transport projects: the use of contingent valuation (Daniels) (awarded Rodney Vaughan Memorial prize for best graduate student paper)
  Industry information and demand for bicycle transport (Katz)
  Residential and workplace location choice: a new approach (Raimond)
  The journey to work in Sydney: urban sprawl and urban myths (Smith)
  ITS research report 1993 (Smith)
  Why should we worry about pedestrians? (Wigan)

Conference attendance

- Transportation Research Board Conference, Washington DC USA, 10-14 January (Smith, Wigan)

- Measuring the Economic Performance of Government Enterprises (IIR Conference), Sydney, 12 February (Hensher)

- Performance Indicators in the Public Sector (IIR Conference), Sydney, 22 February (Lemaître)

- SPSS National User Exchange Conference, Sydney, 12 March (Milthorpe)

- National Conference on Tourism Research, Sydney, 19 March (Daniels, Hensher, Hooper, Lemaître, Nyathi)

- Urban Transport (IIR Conference), Sydney, 22-23 March (Daniels, Smith)

- Light Rail (IIR Conference), Sydney, 24 March (Zhu)

- UITP (International Union of Public Transport) conference, Darling Harbour, May (Battellino, Hensher, Milthorpe, Smith)

- 90th Australian Transport Advisory Committee (ATAC) celebration, 10 June (Hensher)

- Duke Invitational Symposium on Choice Modelling and Behaviour (Workshop on Choice Models from experimental choice sets), 28 July-1 August, Duke University, North Carolina (Hensher)
Velo City Conference: The Civilised City theme, Nottingham, UK, 6-10 September (Katz)

Urban Freight Conference (IIR Conference), 20-21 September (Hooper, Nyathi)

3rd International Conference on Competition and Ownership in Surface Passenger Transport, Toronto, Canada, 26-29 September (Battellino, Hensher)

18th Australasian Transport Research Forum (ATRF), Gold Coast, 29 September-1 October (Daniels, Hooper, Milthorpe, Nyathi)

Customer Satisfaction Surveys (IIR Conference and Workshop), Sydney, 8-10 December (Battellino)

i5th Conference of Australian Institutes of Transport Research (CAITR), Melbourne, 9-10 December (Altınoglu, Daniels, Katz, Raimond, Smith, Wigan, Xu)

Staff also attended a number of seminars including those organised by: the Faculties of Economics and Architecture at the University of Sydney, the Chartered Institute of Transport, the Institute of Engineers, the Roads and Traffic Authority, the Australian Tourist Commission, the Federal Airports Corporation, the Australian Bureau of Statistics, and the National Capital Planning Authority.
OTHER ACTIVITIES

National Conference on Tourism Research

ITS hosted the inaugural National Conference on Tourism Research in March, under the direction of Paul Hooper, chair of the Organising Committee. Professor David Hensher gave the keynote address to over 90 participants from government, academia, and consultants. The conference proceedings, compiled by Paul Hooper, have been published by the Bureau of Tourism Research.

UITP conference and exhibition

ITS promoted the Transport Management program and transport research with a display at the UITP (International Union of Public Transport) exhibition held in conjunction with the UITP conference in May. The display was supported by the Chartered Institute of Transport.

PASET software

ITS Research Fellow William Zhu has developed software to assist bus operators with patronage analysis using data from their electronic ticketing systems. The package is being marketed to bus operators.

LIMDEP-Mac software

ITS Trainee Computer Systems Officer Michael Lowe received funding from the Apple University Development Fund (Apple University Consortium) to develop a Macintosh version of LIMDEP, an econometric software package. LIMDEP-Mac allows people in a large range of fields including econometrics, statistics, transportation, tourism and market research to perform their technical work on a Macintosh computer.

Overseas trips

David Hensher made several trips overseas in 1993. Conference attendance details were provided in the previous section. In July, Professor Hensher visited the University of California Davis, meeting with Professor Dan Sperling, Director of ITS Davis, and Dr Mark DeLuchi; the University of California Irvine, meeting with Professors David Brownstone, Tom Golob and Charles Lave; and met with Professor Ben-Akiva to discuss organisation of the 7th World Conference on Transport Research.

During his September/October trip, Professor Hensher visited Professor Bill Waters at the University of British Columbia; Professor Mike Florian at the
Centre de Recherches des Transports, University of Montreal; and Professor Fred Mannering at the University of Washington, Seattle.

From 10 December 1993 to 10 February 1994, Professor Hensher is Visiting Professor at the Department of Economics and Institute of Transport Studies at the University of California (Irvine). He is working on air quality projects and alternative fuelled vehicles with Professors Tom Golob, David Brownstone, Ryouchi Kitamura and David Bunch.

Activities on this trip will be reported in the 1994 annual report.

Visitors to ITS

- Professor Colin Keay, University of Newcastle, to discuss bicycle research, March
- Professor M. Gupta, Faculty of Management Studies, University of New Delhi, to discuss his transport research interests, April
- Professor Mike Florian, University of Montreal, to present a seminar, April
- Professor Igor Kiselev, Railway University of Petersburg, to present a paper at Transport Policy Workshop, May
- Professor Tom Golob, ITS Irvine, University of California, to present the Structural Equation Modelling short course, June
- Jacqueline Golob, Jacqueline Golob Associates California, to present a seminar at ITS on Air Quality Improvements and Transportation Policy Initiatives in Southern California, June
- Professor Bill Greene, New York University, to present LIMDEP short course, July
- Dr Khaled Abbs, Centre for Transport Research, Cairo University, to discuss transport research, August
- Professor Allan Shocker, University of Minnesota, and Professor Jordan Louviere, University of Utah, to present Conjoint Analysis short course, August
- Frank Bosco, Jean-Xavier Rochu and Daniel Metaut, senior executives with GEC Alstom, to discuss high speed rail projects in Australia, November
POSITIONS

ITS staff hold a number of positions in local and international research organisations in the transport industry.

Conference organisation

Chair, Scientific Program Committee of 7th World Conference of Transport Research (to be held in Sydney 1995) (Hensher)
Vice-Chair, International Scientific Committee of the World Conference of Transport Research (Hensher)
Member, Scientific Committee of 7th International Conference on Travel Behaviour (to be held in Chile 1994) (Hensher)
Member, Scientific Program Committee of 7th World Conference of Transport Research (to be held in Sydney 1995) (Hooper)
Member, International Program Committee of 26th International Symposium on Automotive Engineering and Automation 1993 and 27th ISATA 1994 (Europe) (Wigan)

International

Founding member, US Transportation Research Board Committee on Traveller Behaviour and Values (Hensher)
Member, US Transportation Research Board Committee on Travel Forecasting and Sub-committees on Application of Behavioural Travel Demand Models and Value of Travel Time (Hensher)
Vice-President and President-elect, International Association of Travel Behaviour (Hensher)
Member, US Transportation Research Board Public Transport Committee (Smith)
Member, US Transportation Research Board Committees on Bicycling and Bicycle Facilities 1993-1996; Freight Planning and Marketing; Freight Transportation Data; Motorcycles and Mopeds; and Expert Systems (Wigan)

Local

Member, Australian Bureau of Statistics Transport Statistics User Group (Hensher)
Member, University of Melbourne Transport Research Centre Advisory Committee (Hensher)
Member, Board of the NSW Section of the Chartered Institute of Transport, and Director, Education and Training (Hooper)
Chair, Industry Steering Committee for Bachelor of Commerce (Tourism) at University of Western Sydney (Macarthur) (Hooper)
Editorial positions

In 1993, David Hensher was invited to be on the editorial boards of two new journals: *Transport Policy*, and the *Journal of Retail and Consumer Services*. David Hensher is also on the editorial boards of *Transport Reviews: Transportation; Transportation Research; International Journal of Transport Economics; Logistics and Transport Review; Journal of Transport Economics and Policy; Transportation Planning and Technology*; and the *Journal of Tourism Studies*.

Fellowships

In 1993 David Hensher was honoured as a Fellow of the Australian Institute of Traffic Planning and Management and Paul Hooper was honoured as a Fellow of the Chartered Institute of Transport in recognition of their contribution and achievements in transport.


ADVISORY COMMITTEE

ITS is guided by an Advisory Committee of people experienced in the transport industry. The purpose of the Committee is to assist in the determination of the Institute's direction and priorities. The Committee is chaired by Paul Brown, formerly General Manager of TNT Australia. Members of the Committee are:

Mr Paul Brown (Chairperson)
General Manager (retired)
TNT Australia

Dr Peter Barnard
Manager, Economic Market Intelligence
Australian Meat and Livestock Corporation

Professor Michael Beesley
Professor of Economics
London Business School

Mr Jim Bosnjak
President
Bus and Coach Association

Mr John Brew
Chief Executive Officer
State Rail Authority

Mr John Crowe
Director, Industrial Liaison, Faculty of Engineering
University of Technology, Sydney

Professor Simon Domberger
Deputy Director
Graduate School of Business

Professor Pete Fielding
School of Social Sciences
University of California, Irvine

Associate Professor John Glastonbury
Dean, Faculty of Engineering
The University of Sydney

Dr Phil Goodwin
Director, Transport Studies Unit
University of Oxford
Mr Roger Graham
Director
Roger Graham and Associates

Dr Maurice Haddad
Director
Bureau of Transport and Communications Economics

Professor David Hensher
Director, Institute of Transport Studies
Graduate School of Business

Mr Paul Hooper
Deputy Director, Institute of Transport Studies
Graduate School of Business

Professor Les Johnson
Director, MBA Program
Graduate School of Business
(member from August 1993)

Mr Lyall Kennedy
Director
Kennedy Consultants

Mr Max Moore-Wilton
Director-General of Transport
NSW Department of Transport

Professor Chris Nash
Director, Institute of Transport Studies
University of Leeds

Professor Tony Richardson
Director, Transport Research Centre
University of Melbourne

Professor Stephen Salsbury
Dean, Faculty of Economics
The University of Sydney

Dr Derek Scrafton
Director, Office of Transport Policy and Planning
South Australia
Mr Bob Smith
Manager, Bus and Coach Northern Region
Mercedes-Benz Australia
(member from July 1993)

Dr Narilda Smith
Institute of Transport Studies
Graduate School of Business

Mr Neil Smith
Director
Peninsula Bus Lines

Mr David Stewart
General Manager, Transport and Network Development
Roads and Traffic Authority

Dr John Taplin
Professor of Management
University of Western Australia

Ms Ann Turner
Manager, Programming Strategy
Roads and Traffic Authority
(member until August 1993)

Professor Murray Wells
Director
Graduate School of Business
### FINANCES

The following statement refers to income received by ITS in 1993 only. Income from 1992 is excluded, as are fees from students enrolled in degrees in the transport management program. Some staff labour costs are also excluded from this statement as the cost is not met by ITS.

#### Income

- **Research**
  - Australian Research Council (ARC) grants ............................................. $88,500
  - Contract research ................................................................................. $326,169

- **Education**
  - Certificate of Transport Management .................................................. $232,215
  - Short courses, conferences .................................................................. $46,675
  - Non-award transport management program fees ................................... $27,000

- **Donations**
  - PhD scholarships .................................................................................. $51,971
  - Other donations .................................................................................... $14,711

- **Other income**
  - Publications ........................................................................................... $10,489
  - Interest ..................................................................................................... $20,384
  - Miscellaneous ....................................................................................... $16,516

**Total Income.......................................................................................... $834,630**

#### Expenditure

- **Labour**
  - Permanent staff ...................................................................................... $282,258
  - PhD scholarships .................................................................................... $57,437
  - Casual staff ............................................................................................ $89,738
  - Contract labour services ........................................................................ $90,671

- **Office expenses** .................................................................................. $49,862
- **Travel and conferences** ....................................................................... $48,964
- **Computer equipment** .......................................................................... $34,433
- **Catering** .............................................................................................. $32,453
- **Printing** ................................................................................................ $24,959
- **Resources (books, subscriptions, data)** ............................................. $12,006
- **Other** .................................................................................................... $26,661
- **Commitments/provisions** .................................................................... $83,197

**Total Expenditure..................................................................................... $834,630**
Written and designed by Rhonda Daniels
Wheels by Timothy Raimond

Institute of Transport Studies
Graduate School of Business
The University of Sydney

January 1994