ITS

1997 ANNUAL REPORT

A report on the 1997 activities of the Institute of Transport Studies: The Australian Key Centre in Transport Management, ITS Sydney and ITS Monash.

Established and supported under the Australian Research Council's Key Centres Program.

INSTITUTE OF TRANSPORT STUDIES

The Australian Key Centre
in Transport Management
The University of Sydney
and Monash University

1997 Annual Report
January 1998

INSTITUTE OF TRANSPORT STUDIES

The Australian Key Centre
in Transport Management

Sydney

Graduate School of Business
The University of Sydney
NSW 2006, Australia

144 Burren St, Newtown 2042

Phone +61 2 9351 0071
Fax +61 2 9351 0088
Email itsinfo@its.usyd.edu.au
http://www.its.usyd.edu.au

Monash

Department of Civil Engineering
Monash University
Clayton VIC 3168, Australia

Phone +61 3 9905 9627
Fax +61 3 9905 4944
Email itsinfo@eng.monash.edu.au

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1 ABOUT THE KEY CENTRE

ITS: The Australian Key Centre of Teaching and Research in Transport Management was established in July 1995 as a joint venture between the University of Sydney and Monash University. ITS grew out of two existing centres – the Institute of Transport Studies within the Graduate School of Business at the University of Sydney, and the Monash Transport Group within the Department of Civil Engineering at Monash University. The Institute at Sydney and the Monash Transport Group were leading Australian centres in transport management and traffic education and research in their own right prior to the establishment of the Australian Key Centre.

The Institute of Transport Studies (ITS) has nodes at the University of Sydney and Monash University. The Director of ITS is Professor David Hensher, FASSA, Professor of Management at the University of Sydney. Associate Professor Bill Young is Head of ITS Monash.

The Key Centre is guided by an Advisory Committee of eminent academic, industry and government representatives, chaired by Professor John Taplin, AM. Its role is to provide advice on any matters referred to it by the Key Centre Executive, as well as to initiate matters for consideration that are of interest to the Key Centre, such as the teaching and research program and opportunities for participation of industry and government. The Advisory Committee met once in 1997, in Sydney.

ITS provides education programs at a range of levels: PhD, Masters and Graduate Diploma, continuing education workshops, management development seminars and Certificate programs. In addition, ITS also conducts transport related research. The Institute has an extensive program of related activities including publications, participation at conferences, software development and links to other leading transport research institutes

The Key Centre in Transport Management will be regarded by industry and government throughout Australia and the Asia-Pacific region as the first place they should contact for expertise on state-of-the-art management practices in transport.

DIRECTOR'S REPORT

1997

1997 marks the seventh year of the establishment of the Institute of Transport Studies at the University of Sydney and the twenty eighth year of the establishment of the Monash Transport Group at Monash University. More importantly, it marks the third year of the joint venture between Sydney and Monash under the umbrella of the Key Centre for Teaching and Research in Transport Management.

Both nodes have now established a solid working relationship with active teaching and research programs. ITS Monash has successfully concluded negotiations with the Bus Association of Victoria and the Department of Infrastructure to develop and run an education program in Transport Management for Victorian bus and coach operators. The program is a modified version of the Sydney program to encapsulate a distance education mode and local institutional content. ITS Monash is also developing a distance education program for the Parking Industry. This program is sponsored by the Parking Association of Australia. ITS Sydney has received an annual scholarship from the Rail Access Corporation for a female student to undertake the Master of Transport Management (MTM), and has completed the pilot program of 28 participants for a Certificate of Logistics Management/Supply Chain Management and Freight Management. This program will be offered annually at ITS Sydney. This program has also been offered once in Malaysia. ITS Sydney has signed a memorandum of understanding with Massey University in research programs and training at the graduate level.

After seven years in the Graduate School of Business, ITS Sydney is relocating to the Faculty of Economics within the University. I wish to take this opportunity to record a personal appreciation of the active support from Emeritus Professor Murray Wells, Director of the Graduate School of Business, who has enabled ITS to blossom into the success it now is. ITS Sydney will continue to operate along the same lines as before but with new opportunities for closer collaboration with other Departments within the Faculty, especially Marketing, Econometrics, Finance and Industrial Relations. ITS Sydney will remain in Burren St. until it moves in late 1999 to a new building on the main campus.

The research activities of ITS are an important part of its charter. The extensive outputs are set out in this report. Particularly gratifying is the diversity of research activity across all modes. Singling out any piece of research is always problematic; however I want to congratulate Associate Professor Paul Hooper for his research papers emanating from his Outside Studies Program in 1997. Paul spent time in India researching the evolution of an open skies aviation policy and the challenges and lessons to be learnt for new entrants in a liberalising market. The research has been praised at a major aviation conference in Canada linked to the APEC transport forum with an initial paper to appear in *Transportation Research*, the most prestigious journal in transportation research.

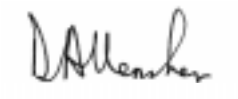
During 1997, we undertook a review of the structure and objectives of the Advisory Committee. A survey was completed by all members and used as the basis of a series of recommendations. The recommendations are currently being considered by Committee members as part of a process of improving the effectiveness of the bi-annual advice. For this reason, the September meeting has been adjourned until next February in Melbourne.

We anticipate that 1998 will continue the active pace of previous years. ITS Monash has committed itself to more involvement in certificate education; ITS Sydney has repositioned itself to allocate more time to basic research and to develop a strong analytical capability in areas of travel behaviour and aviation, as well as transport planning for the Sydney Region, focusing on both passenger and freight activity.

I am pleased to announce that Professor Trevor Heaver from University of British Columbia (UBC) will be visiting ITS on a regular basis from 1998 to deliver lectures in Maritime Markets. ITS has established a close relationship with UBC, with Professors Garland Chow and Bill Waters being in residence in Sydney as Visiting Professors in 1996/97 (Garland) and 1997/98 (Bill). Their contribution has been greatly appreciated.

DIRECTOR'S REPORT

Through the annual report, I wish to thank all members of ITS for their support in 1997 and especially the great team spirit which has developed to ensure that ITS will continue to deliver excellence in its teaching and research activities. Our success is due in large measure to the team spirit and commitment of ITS staff.



David A. Hensher

Director

MEETING OBJECTIVES

3

Objectives

The primary object of the Institute is to undertake graduate teaching, management development programs, grant and contract research and development in the field of transport studies.

The work of the Institute also has the following objectives:

- To provide a focus for University work in areas of transport management and to establish an environment attractive to those committed to excellence in graduate transport programs and research;
- To collaborate with key players having an interest in transport studies and its applications;
- To offer specialised training courses, workshops, short courses and seminars on topics of interest in the area of transport management; and
- To seed the development of innovative ideas in transport policy and professional practice in Australia, in which the Institute of Transport Studies plays a role.

Achieving objectives

These objectives are achieved by:

- Developing and offering graduate transport programs, certificate, management development programs and short courses at both ITS Sydney and ITS Monash;
- Bringing high quality transport management programs to people outside Sydney and Melbourne as well as widening the offerings of courses in Melbourne and Sydney through access to courses provided by both ITS Monash and ITS Sydney;
- Contributing to Australia's growing participation in the Asia Pacific region in a leadership role in transport management;
- Widening the range of courses available for middle level professional managers in critical areas of transport not currently served;
- Equipping managers in all disciplines (e.g. engineering, economics, planning), the small business sector and local government to succeed in the face of technological, economic and institutional change;
- Building on the recognised need for stronger links between education of technical specialists and managers in transport;
- Undertaking research to develop state-of-the-art management practices and technical processes;
- Transferring the knowledge developed through research to client groups through the Institute's publications, workshops, conferences, seminars, and by participation in networks of transport managers and engineers; and
- Conducting activities that are directly or indirectly related to the attainment of the above objectives.

Objectives and performance measures

The following table summarises performance measures to show how the Key Centre is meeting the objectives outlined in its application. More detail is provided in specific sections throughout the annual report.

Objectives	Performance measure
Australian transport management expertise highly regarded	• Requests for working papers • Requests for involvement in research and consultancy projects • Strong enrolments in all levels of education programs from PhD, Graduate program, Certificate programs and short courses • Editorial positions held by staff on leading international journals
Programs outside Melbourne/Sydney	• Commence development of CTM (Bus and Coach) in Victoria • Certificate of Logistics Management/Supply Chain Management and Freight Management offered for first time in Malaysia • Commence development of Certificate of Coach Management for Western Australia • Commence development of Certificate of Maritime Logistics • Design of a Distance-based Parking Program • Delivery of courses in Massey University's Graduate Diploma in Transport Planning • Commence development of Higher Degrees in Transport & Traffic Engineering using distance education mode
Contribute leadership in Asia Pacific	• Participation in Asia Pacific Conferences • Aviation research for Asia Pacific countries
Courses in critical areas for middle managers and equip small business	• Certificates of Logistics Management/Supply Chain Management and Freight Management piloted • Short courses and workshops to meet specific needs • Graduate transport management programs revised for 1998 to reflect industry needs • Introduction of Transport Management major in MCom (Sydney) • Participate in delivering logistics systems courses within the Centre for Information Systems at Monash
Link transport engineering and management education	• Short courses and workshops integrating engineering and management
State of the art research	• Many research projects for range of government and private clients • GPS/GIS mobile traffic laboratory established at ITS Sydney • 25 Publications in leading journals • 3 new PhD candidates commencement in 1997, ITS Sydney • 1 new PhD candidates commencement in 1997, ITS Monash
Transfer of research to transport community	• Through publications including working papers, conferences, journals and books such as *Operating a Bus and Coach Business, Roads and the Community and Traffic Engineering and Management* • Through presentations and attendance at conferences and seminars • ITS Monash convened the 19th Conference on Australian Institutes of Transport Research

ITS Sydney

Academic and research staff

David Hensher, BCom(Hons) PhD, FASSA FCIT FAITPM CompIEAust MAPA
Professor of Management
Director, Institute of Transport Studies (Sydney)

A Fellow of the Academy of Social Sciences in Australia, President of the International Association of Travel Behaviour Research and Vice-Chair of the International Scientific Committee of the World Conference of Transport Research, David has published extensively (over 200 papers) in the leading international transport journals and key journals in economics as well as five books. He has completed a book in 1998 on Stated Choice Methods (with Jordan Louviere and Joffre Swait) and is currently writing a book on the Practice of Transport Management (Allen and Unwin) with Ann Brewer.

Major areas of teaching and research are transport economics, transport strategy, transport policy, sustainable transport, productivity measurement, stated choice experiments, dynamic discrete-continuous choice modelling, privatisation and deregulation. David has advised numerous government and private sector organisations on matters related to transportation.

Garland Chow, BS MBA DBA
Collex Professor of Logistics and Freight Transport Management (from July 1996 to July 1997)

Garland visited ITS in 1996-97 from the University of British Columbia. He has written extensively on the economics, regulation and management of the trucking industry in North America. He is on the editorial board for *Logistics and Transportation Review*.

Paul Hooper, BEc(Hons) MTransEc PhD, FCIT
Associate Professor in Transport Management and Deputy Director (until July), Institute of Transport Studies

Paul is a recognised specialist in aviation and tourism policy and its implications for the transport sector. Paul has far ranging experience in the transport industry, with major projects spanning all modes of transport. He specialises in the transport-tourism interface and in aviation policy and management, and is a member of APEC Transport Taskforce.

Ann Brewer, BA MCom(Hons) PhD
Associate Professor in Transport Management and Director, Industry Programs

A recognised specialist in human resource management and business communications, Ann has experience in a number of industries, with major projects on current issues such as organisational change, work practices and employee commitment. Ann has published numerous papers and three books. Ann was co-author (with David Hensher) of *Operating a Bus and Coach Business,* published by Allen and Unwin in 1997.

Ross Robinson, BA MA PhD, MCIT
Associate Professor of Maritime Transport and Director, Maritime Program (until December)

Ross is a recognised specialist in port development policy, ports development strategies, port efficiency and port-related logistics efficiency in Australia and in countries in Southeast and East Asia. He was named in 1994 by UNCTAD as one of the world's leading researchers in the fields of shipping and ports.

Sophia Everett, BA MA (Hons) PhD MPP, MCIT
Senior Lecturer in Maritime Transport (until December)

Sophia is a recognised specialist in the formulation and implementation of Australian maritime policies and in maritime transport policies of countries in Southeast Asia and East Asia. Sophia has a special interest in port corporatisation and privatisation and in 1995, with Ross Robinson, won the Australian Chamber of Shipping Research Award.

Tu Ton, BEng MEngSc PhD
Senior Research Fellow

Tu has skills in traffic and transport engineering; EIA of transport infrastructure; and traffic and transport computer modelling using artificial intelligence technology including object-oriented programming, artificial neural networks and knowledge based expert systems. In 1997 Tu established the ITS Sydney Geographical Information System (GIS) Laboratory to provide technological support for ITS, Land Use-Transport-Environment Model System.

Michael Nyathi, BBus MTM PhD
Lecturer (until February)

Jenny King, BBuild (Hons) MTM
Senior Research Analyst

Jenny provides support in research programs and has skills in survey design, data collection and analysis, and desktop publishing. She is currently involved in managing ITS's International Benchmarking Program in Bus and Coach as well as completing graduate studies in Business Statistics.

Jackie Fitzgerald, BSc (Hons)
Research Analyst (from February)

Jackie joined ITS in February 1997. Her position is partially funded by an ARC (Institutional) grant for the Telecommuting and Travel Behaviour research. She assists in various research tasks for this project.

Kirk Bendall, BBus, MTM
Research Analyst (part-time) (from November)

Kirk joined ITS in November 1997 after completion of the MTM. His fields of interest include intelligent transportation systems and standardization and advanced traveller information systems (ATIS). He is currently involved in the ongoing development of ITS, Land Use-Transport-Environment Model System (with Tu Ton), particularly in the conversion of the model to object-orientated architecture, improving user interface and enhancing its functionality. This model predicts the effects of policies studied on travel behaviour and greenhouse gas emissions.

Naureen Shuja, BA (Hons)
Research/Administration Associate (May to November)

Naureen joined ITS in May 1997. She has been instrumental in the administration of CTM and CCM in Sydney as well as the promotion and administration of new Certificates in Logistics/ Supply Chain and Freight Management. Naureen also assists in various research tasks for ITS.

Stephen Leonard
Computer Systems Officer (part-time)

Stephen maintains the computer network, provides computing technical support and performs other computer-related jobs as required. He also has skills in development of databases, and has participated in the programming of ITS Bus and Coach Benchmarking Software, and the ongoing development of ITS, Land Use-Transport-Environment Model System (with Tu Ton).

Full-time PhD students

*Rhonda Daniels (*graduated in October), *Ruanthi De Silva, Chackrit Duangphastra, Jajang Hasyim, Adiyaya Yusuf*

Administrative staff

Fiona Campbell, DipBus.Studies
Administration Associate – Graduate Programs (to January)

Julie McKone
Personal Executive Assistant

Bruno Sirianni, BIT&C
Administration Associate – Finance and Travel

Maggie McSweeney
Administration Associate – Industry Programs (February to May)

Vanessa O'Riain, B.B.S. M.B.S.
Administrative Associate - Industry Programs (from November)

Sally Xexenis, BA
Administration Associate (from March)

Rebecca Reay-Young
Administration Assistant (May to November)

Adjunct faculty

Andrew Kerr, MBA DBA
Managing Director, Griffin Corporate Services

Andrew specialises in strategic business planning operations management and logistics. He has previously held line and staff appointments with Australian Army supply units and senior management positions with large public companies. Andrew teaches logistics management in our graduate and certificate programs.

Alastair Stone, MSc, DEng
Managing Director, Pacific Infrastructure Corporation

Alastair has over thirty years experience in banking, economics and engineering. He has successfully initiated, implemented and participated in major projects and infrastructure deals. He has also advised various international and domestic agencies and governments; including the Asian Development Bank, World Bank, Jakarta Municipal Government, Shanghai Municipal Government, and several Australian State Governments, on private sector participation policies and strategies. His career has covered all facets of urban affairs including senior positions with the World Bank, Lend Lease and Merill Lynch. Alastair teaches in the area of joint ventures in public infrastructure projects.

Rodney Swan, BSc (Hons) MTech
Managing Director, BGP Pty Ltd

Rodney is one of Australia's leading strategists in competitive bidding for public and private sector service projects, with a number of successful infrastructure projects to his credit. He is highly experienced in the financial and operational requirements of projects, with expert knowledge of opportunities in the transport, health and environment sectors. Rodney teaches in the graduate program in infrastructure planning and outsourcing.

In addition, Professor Pete Fielding (University of California, Irvine) and Professor Tony Richardson (Transport Research Centre, RMIT University) contributed annually to our graduate program.

Associate Professor Ross Robinson, Dr Sophia Everett, Dr Tu Ton and Julie McKone are funded by the Key Centre.

ITS Monash

William Young, BE GradDipMgt MSc PhD, FIEAust FCIT CPEng
Associate Professor (40% at ITS)
Head, ITS Monash

A recognised specialist in parking and transport land use interaction, Bill has recently taken up an appointment as Director of Civil and Computing program on the Caulfield Campus. His research interests also cover infrastructure management and computer systems. He is presently President at the Institute of Transportation Engineers.

Geoff Rose, BEng MSc PhD, MIEAust CPeng
Senior Lecturer (40% at ITS)

Geoff's professional interests cover environmental impacts and sustainable travel, non-motorised transport and the application of advanced technology to the surface transport system. His experience spans government, consulting and academia. He is currently involved in an NRMA initiated travel awareness campaign aimed at reducing air quality problems caused by motor vehicles and in a number of research projects focused on aspects of intelligent transport systems.

Samantha Taylor, BE, MEngSc (Hons), GradIEAust MITE
Lecturer (100% ITS)

Samantha has a keen interest in a variety of transportation areas and has over 20 publications including those in the areas of traffic engineering, porous pavements, life-cycle costing, transport policy and her specialty of urban goods movement. She is currently international secretary of the World Conference on Transportation Research, Special Interest Group in Urban Goods Movement (WCTR SIG UGM), and is also Chair of The Institution of Engineers, Transport Branch (Victoria). Samantha is joint editor with Professor Ken Ogden of the textbook, *Traffic Engineering and Management (1996)*, successor to the extremely popular *Traffic Engineering Practice (1989)*.

Peter Daly, BE (Hons), GradIEAust MITE Assoc. Fellow ACRS PEng
Lecturer (30% at ITS)

Peter is a civil engineer who has specialised in road safety, road engineering and transport modelling. He is currently completing his PhD on activity based transport demand models. Peter's interests include road safety and the environmental aspects of transport. He recently taught in an AUSAID sponsored road safety course in Thailand, and directed the Accident Investigation and Prevention Workshop at Monash.

Hussein Dia, BSc MSc PhD, MITE PEng
Lecturer (30% at ITS) (until November)

Hussein's main interests lie in the areas of Intelligent Transport Systems (ITS) and the application of advanced computing techniques and technologies to the transport and traffic engineering areas.

Andrew Haines, BSc
Technical Support

Andrew provides technical support in the computing and systems area.

Nicole Spicer
Administrative Assistant (until September)

Brenda O'Keefe
Administrative Assistant (from September)

Adjunct positions

Professor Ken Ogden,
Manager (Public Policy), RACV

Ken has over 29 years of experience in Transport and public policy. He is Group Manager (Public Policy) in the Royal Automobile Club of Victoria, where he has responsibility for the Club's advocacy activities and research in such areas as road and vehicle safety, traffic engineering, transport planning and policy and traffic safety education.

PhD students

Peter Daly, Brett Lemas, Olle Norojono, Darryn Paterson and Fotios Spiridonis.

RESEARCH AND POLICY

New in 1997

Impact of eliminating federal excise tax on fuel on demand for new buses (ITS Sydney)

The Bus Industry Confederation (BIC) have engaged ITS to provide specialist advice to Ernst and Young, as input into a paper for a BIC Forum in December 1997, in relation to the i) the composition of revenue received by bus operators, with particular reference to the concessional reimbursement and subsidy component, ii) the composition of fuel prices, identifying the tax component, iii) the possible impact that elimination of the fuel excise may have in reducing the costs of operating a bus business, iv) the impact on market share of reductions in bus fares and increases in bus frequency, under scenarios of no flow on to passengers of elimination of federal excise through reduced fares and a flow on through reduced fares, v) the broad set of benefits and costs associated with public transport, particularly buses (include environmental items, traffic congestion and safety), vi) a summary of the number of users of public transport - bus and rail and vii) comments on the externality debate to justify low fares - issues of competitive neutrality or competitive efficiency.

Marketing the M2 Hills Motorway (ITS Sydney)

ITS prepared marketing material for the new M2 Hills Motorway in Sydney's north-west which opened in May. The brochures showed travel time savings from using the Motorway. The project was funded by the M2 Hills Motorway toll operator TollAust Pty. Ltd.

Speedrail (ITS Sydney)

ITS revisited the 1994 Speedrail study on behalf of GEC ALSTHOM (UK) to identify revisions required in the patronage and revenue market potentials established for Speedrail services in the year 2000. In addition the forecasts of patronage and revenue were extended over a further three years up to the year 2003. In November, ITS together with SKM Economics undertook new primary data collection to re-estimate the set of behavioural travel choice models used in forecasting the demand for Speedrail.

Evaluating minimum service levels for bus services using GIS (ITS Sydney)

Based on a project for Blue Ribbon Coaches, ITS has developed GIS-based software to evaluate minimum service levels for bus routes. The software called RouteInfo is offered to bus operators on a subscription basis.

School bus routing (ITS Sydney)

In a related project, school bus routing is being examined for Blue Ribbon Coaches.

Predicting the Duration and Effects of Freeway incidents (ITS Monash)

This research project undertaken by Geoff Rose and Darryn Paterson is being funded by VicRoads. The project aims to develop a predictive model which could be used for planning maintenance activities on freeways or to assist in management of freeway incidents.

Variable Speed Control on Freeways (ITS Monash)

This project undertaken by Geoff Rose is examining the potential to improve safety and throughput on freeways through dynamic speed control. A review of European initiatives in this area has been completed and used to highlight issues which would need to be considered by Australian State Road Authorities if they were to consider implementing a similar system in this country.

Measurement of driver behaviour and vehicle kinematics using an instrumented vehicle (ITS Monash)

This research undertaken by Peter Daly aims to examine on road vehicle kinematics and driver characteristics which may contribute to the development of a measure of traffic flow quality,

improved road design, road and environment safety.

Trip chaining behaviour and activity location choice (ITS Monash)

Trip chaining is examined by Peter Daly to determine trade-offs between quality of access to activity locations and their perceived importance by different segments of the population.

Studying travel behaviour (ITS Sydney)

David Hensher and Tu Ton are jointly studying travel behaviour using artificial neural networks and discrete choice models. Understanding and predicting traveller behaviour remains a complex activity. This research explores the merits of neural networks as part of a revised framework to explore the processes of traveller decision making, and how discrete choice methods might be integrated within such a framework to acknowledge the important role that the latter tools have played in the last 25 years in the development of better practice in travel demand modelling. Case studies of travel survey data of six major Australian cities were used to test the transferability of travel choice among them.

NRMA Travel Blending (ITS Monash)

This project, funded since 1995 by NRMA as part of its Clean Air 2000 Initiatives, is undertaken by Geoff Rose, working in conjunction with Liz Ampt of Steer Davis Gleave (UK). The focus is on the development of an individual action campaign involving a series of kits which are sent to participating households to enable them to identify ways in which they may be able to reduce motor vehicle emissions and thereby help to clean the air. The kits include travel diaries which are analysed and tailored feedback is sent to the participants. A pilot study with a small sample of households involving NRMA employees was completed in 1996. Tests of automated systems for program delivery are currently underway and a larger trial is planned for 1998.

Modelling demand and parking management (ITS Monash)

This research undertaken by Peter Daly and Bill Young models urban travel on a city-wide scale using activity modelling approaches.

GPS/GIS mobile traffic laboratory (ITS Sydney)

ITS Sydney received a $15,000 University Infrastructure Grant to invest in GIS and GPS technology. These two technologies will be used for the building of a mobile traffic/transport navigation laboratory to support the research and teaching of the transport system program at ITS. An integrated GIS and GPS system will provide valuable tools for traffic data collection towards a better understanding of traffic conditions and the associated parameters (for example, speed, delay, travel time).

Distributed work and travel patterns (ITS Sydney)

Ann Brewer and David Hensher received a $10,000 University of Sydney Institutional Grant for research on establishing the nature and strength of causality between organisational structure, work arrangements, flexibility, travel behaviour of employees and transport emissions. This project will form the basis of a large ARC grant application for 1998.

Redesign of the Sydney passenger travel model system (ITS Sydney)

Working with Hague Consulting Group, ITS redesigned the Sydney passenger travel model system for the Transport Data Centre, NSW Department of Transport. Seven research and implementation reports have been prepared.

Introduction of electronic data interchange (EDI) (ITS Sydney)

The Chartered Institute of Transport (CIT) is an independent, non-political organisation made up of members who predominantly work in the diverse fields of transport. Members have an interest in, and commitment to, the economic and

social development of transport. In addition, the CIT acts as a forum for reasoned discussion and research into transport issues, considering contemporary problems and possible solutions and imparting the results to a wider audience. This paper is presented by the CIT International Council with the aim of contributing to and improving the state of international knowledge concerning the use and application of Electronic Data Interchange (EDI) in transport. The Council believes that EDI is a powerful change agent that has far-reaching implications for the transport sector, but it also is a necessary response to the economic challenges of the 1990's. The paper was written by Paul Hooper to explain those challenges and to describe how EDI is being used to improve the flow of information and to enable businesses and nations to maintain their competitiveness. The focus of the paper is global while emphasising the relevance of EDI for emerging national economies. The International Council intends to distribute this report world-wide amongst its membership, to Trade Ministers of all English-speaking developing countries, to UNCTAD, and to trade-related organisations such as APEC.

Freight Activities (ITS Monash and Sydney)

Samantha Taylor is working with Transport Research Centre on a proposed Freight Activities and Commercial Travel Survey (FACTS) in metropolitan Melbourne. The survey aims to collect data on activities and travel of commercial vehicles in and around Melbourne. The survey will use GPS, GIS and PDA technology to collect the data. The FACTS project is currently at the prototype development stage. David Hensher is continuing his research on the development of a freight strategy for NSW with particular reference to infrastructure needs.

Review of Commercial Vehicle Demand Studies (ITS Sydney)

Garland Chow undertook a review of existing commercial vehicle demand models developed and applied in the USA and Canada for the Transport Data Centre.

Business plan for African Islands Airways (ITS Sydney)

As an island economy, Mauritius relies heavily on its airline services. Air Mauritius, the sole national carrier, has a fleet of large, wide-bodied aircraft that it uses to serve its long-haul markets and a small number of turboprop aircraft it uses to serve Rodrigues and Reunion. The Government of Mauritius envisages the nation playing an important role as a business centre and logistics hub for Eastern and Southern Africa and for the Indian Ocean States. However, this is predicated on the development of regional airline services. A Mauritian entrepreneur has proposed the formation of a regional airline and has commissioned Speedwing, the consulting arm of British Airways, to prepare a business plan. Paul Hooper has prepared a complementary report to the Government establishing why the proposal is in the interests of the economy, especially to tourism and business, and assessing the wider impacts of the airline, including its implications for Air Mauritius. Paul Hooper presented his report to the Prime Minister's advisers and to a meeting of 100 leading business people in Mauritius in May 1997.

Need to liberalise airline regulation to promote freight activity in the Mauritius Freeport (ITS Sydney)

In 1996, Paul Hooper was assigned to a project team as the Transport Economist to investigate the need to liberalise airline regulation in Mauritius. The Mauritius Freeport Authority was established in 1993 and a US$100 Million investment in seaport facilities is expected to give a boost to warehousing and distribution activities in Mauritius. The political and economic stability of Mauritius and its location on the main trade route between Asia and Eastern and Southern Africa and the Indian Ocean Commission countries are strategic advantages that will help to sustain a logistics hub. However, air freight services, particularly those to Asia and within the region are not well developed. This study examined the need to liberalise regulatory policies. Paul Hooper prepared forecasts of traffic potential, estimated costs of different types of

aircraft operations, examined trends in logistics involving greater use of air freight, identified target commodities for air freight and investigated economic implications for Mauritius.

Strategies for BARA (ITS Sydney)

Ann Brewer undertook a two-part study commissioned by The Board of Airline Representatives of Australia Inc. (BARA). The first part of the study was to identify the needs of BARA members; in particular, to assess the extent to which needs are met by the current structure and programs of BARA, identify the needs of non-eligible airlines and assess the potential for membership, and review the attitudes of key stakeholders; which included FAC, DoT, Department of Immigration and Multicultural Affairs, and Airservices Australia. The second part of the study was to develop an implementation strategy and program for the future for BARA's Management, Human Resource and Performance Strategy.

Residents' perceptions of road based traffic noise (ITS Monash)

Peter Daly and Simone Callaghan are examining residents' qualitative perceptions of road-based noise and evaluating linkages between disturbance from road-based noise and house type and proximity to noise source, bedroom location, road speed limit variation, traffic composition, weather and resident activity patterns.

Safety issues related to "Seagull" median treatments on arterial roads (ITS Monash)

This project undertaken by Peter Daly, Michael Broekman and Stuart Bird looks at accident rates and risk exposure to road users at 'Seagull' medians and examines alternative treatments.

Hazardous road locations (ITS Monash)

This research undertaken by Peter Daly and Natalia Rosalion involves an analysis of mass accident data on a statewide, route, and road segment level to identify causal factors and the development of possible countermeasures.

Worksite traffic safety (ITS Monash)

This project undertaken by Peter Daly and Bernard Francis investigates a number of areas relevant to the safety workzones on roads through literative review, interviews with the principals involved in the area and a survey of workers who work in these zones.

Pedestrian safety, Monash University Clayton Campus (ITS Monash)

This project undertaken by Geoff Rose, Peter Daly and Hussien Dia examines issues related to pedestrian safety in a mixed landuse environment. Issues such as pedestrian movement patterns, integration of the pedestrian cyclist plans with road infrastructure development are studied.

Conceptual design of pavements (ITS Monash)

Bill Young and Brett Lemas undertook the development of a design support system for pavements. The program presents a user friendly approach to develop conceptual designs of road pavements.

Multi-use developments (ITS Monash)

Bill Young, Henry Le and Yan Weng Tan are developing a computer system for the design and investigation of traffic systems within multi-use developments. The program enables the movement of vehicles in these precincts to be replicated and the impact of landuse and traffic changes to be monitored.

Landuse/ Transport / Environment

The continuing development of modelling procedures applicable to investigating the impact of landuse and transport infrastructure changes in urban areas is being undertaken by Bill Young.

Freight modal choice in Indonesia using disaggregate choice modelling (ITS Monash)

Over recent years Indonesia has been growing dramatically resulting in a large growth in freight demand. This study examines modal choice factors for freight movement on the Indonesian island of Java. This project is undertaken by Olle Norojono, Samantha Taylor and Bill Young.

Continuing from 1996

ITS International Bus and Coach Performance Benchmarking Program (ITS Sydney)

This is an on-going program launched by the Institute of Transport Studies in November 1995. There were 22 subscriptions received for the year 1996/97.

Malaysian cargo through Malaysian ports: defining appropriate policies

Malaysian ports now handle up to 60% of export containers through the Port of Singapore. This project assesses the reasons why this is the case; and outlines a number of policy initiatives that may be used to reorient export flows through Port Klang as a hub port.

Malaysian flag shipping and the national Balance of Payments

A large proportion of Malaysian cargoes are shipped in vessels of other countries. This project assesses the costs and benefits of doing so and particularly its impact on the national Balance of Payments. The project further outlines appropriate policies in regard to the development of the Malaysian flag fleet.

Both projects are carried out in cooperation with the Maritime Institute of Malaysia (MIMA) for the Malaysian government. The final reports were published by the Maritime Institute; and papers were presented at a special conference in Malacca in early 1997.

Stevedoring productivity at Australian container terminals

This project examined the relationship between container terminal productivity and Enterprise Agreements (EAs). These Agreements were seen to provide competition within the stevedoring market and as a basis for increased productivity. The project found that rigidities embedded in the EAs effectively prevent high productivity. The project was carried out for the WA Department of Transport.

Reforming ports: the privatisation debate

This project examined privatisation initiatives for Australian ports. It found that privatisation legislation across Australia varies markedly; and that under some legislation, there are significant constraints placed on achieving higher efficiency levels in ports. The project was carried out under a grant from the Australian Chamber of Shipping.

Asian hub/feeder nets: the dynamics of restructuring

This research examined the basis of change in port/shipping networks in East and Southeast Asia over the last decade. It found a number of major region-wide factors of importance such as the emergence of China, deregulation of markets and rapid growth in regional economies, but fundamental changes in global liner shipping are likely to modify existing networks. The project was funded from various sources.

The impact of efficiency improvements in container handling operations on the Australian economy

This project examined the nature of multiplier effects of improved efficiency in container handling operations. It suggested that if Australian ports handled about 2 million containers, revenue spinoffs may total $22.2 billion in current prices and have employment impacts of 179,000. Achievable efficiency improvements could result in dollar impacts of almost one billion dollars. The project was funded by a major international maritime firm.

Other projects

Other projects included:

- David Hensher appeared as an expert witness on behalf of a major property developer in a case on parking in Sydney CBD including the issue of curfews before 9.30 am vs inverse pricing of parking for long-stay parkers (21-22 February).

- Samantha Taylor provided specialised advice to MarketMetrics in Melbourne on Customer surveys on "Victorian public transport systems for revenue allocation purposes" (December 1997).

- Samantha Taylor collaborated with Sinclair Knight Mertz (SKM) in Melbourne on development of a feasibility study of freight modelling using existing data in Sydney (September 1997).

ITS Sydney

The Education program at ITS Sydney includes:

- PhD program;
- Graduate transport management program;
- Certificate programs; and
- Executive short courses.

ITS offers a fully articulated set of programs in transport management education, as shown below. Note that articulation between programs is not automatic. The Graduate Certificate of Transport Management has been approved by the Board of Graduate Studies. This completes the full range of graduate program offerings. The Graduate CTM will be offered from 1999.

PhD program

Ian De Mellow graduated in May with his thesis titled Total Factor Productivity of the NSW Railways. Rhonda Daniels graduated in October with her thesis titled A Stated Choice Framework for Valuation of Environmental Externalities of Road Projects.

Students in the PhD program at ITS (at the end of 1997) include:

Full-time

Ruanthi De Silva (1996): Liner shipping (until December)

Chackrit Duangphastra (1997): Airport competition and choice in South East Asia

Jajang Hasyim (1996): Capacity considerations at ports (until December)

Adijaya Yusuf (1997): Port regulation (until December)

Part-time

Seu Cheng (1992): Interactive agency choices in domestic freight movements

Ron Fisher (1997): Current and desired modes of management education for organisational development

Sandy White (1996): Airport operational development in Asia (until December)

Graduate transport management program

The transport management program includes the Master of Transport Management (10 courses) and the Graduate Diploma in Transport Management (6 courses). There are currently 97 students in the program. 26 students graduated in June and 22 in October.

12 new Masters students and over 21 new Graduate Diploma students enrolled in 1997.

Courses

ITS staff taught the following transport management courses in 1997:

Semester 1

- Freight Operations and Management (Chow)
- Maritime Markets (Robinson and Everett)
- Quantitative Analysis (Hooper and Ton)
- Transport Economics and Management (Hensher and Brewer)
- Transport Planning Methods (Ton and Hensher)

Semester 2

- Logistics Management (Kerr)
- Transport Policy Workshop (Brewer, Hensher, Hooper and Waters II)
- Transport Strategy (Hooper and Brewer)
- Urban Public Transport Operations (Ton, Richardson, Fielding)

Student awards

Pehrinba Renganathan received the Institute of Transport Studies prize for excellence in full-time study in the MTM program. Matthew Hunter received the Chartered Institute of Transport Ken Hillyar award for best Year 1 student in the MTM program and Kirk Bendall received the Chartered Institute of Transport Sir Hudson Fysh award for best Year 2 student in the MTM program. Darren Suivi received the Australian Institute of Traffic Planning and Management prize for best student in the Graduate Diploma program.

The TNT Prize in Logistics Management was awarded to Darren Suivi.

The awards were presented at the Institute of Transport Studies end-of-year dinner on December 6 attended by students, staff, members of the Advisory Committee, alumni members and supporters of the Institute.

L to R: Associate Professor Ann Brewer, Kirk Bendall, Matthew Hunter, Pehrinba Renganathan and Professor David Hensher

The Rail Access Corporation of NSW Scholarship

Ann Brewer designed the *Women in Transport Management Scholarship* which is developed with and funded by Rail Access Corporation. This is a full scholarship for a woman to do the Master of Transport Management program which covers all tuition fees and paid work during University holidays with Rail Access Corporation. The scholarship was advertised in 1997 and was awarded to Julie Dryden, who will be commencing the course in 1998.

Certificate programs

Certificate of Transport Management (Bus/Coach)

The CTM was established in conjunction with the Bus and Coach Association (NSW) to provide managerial training for the bus and coach industry. It is the only program to meet the accreditation requirements under the NSW 1990 Passenger Transport Act.

In 1997 ITS conducted two CTM courses with 67 students. Despite these intakes, at the end of 1997 there was an extensive waiting list for the CTM.

Certificate of Coach Management

The Certificate of Coach Management (CCM) is specifically designed for coach operators accredited for long distance and tourist vehicle services (including overnight charter work).

In 1997, over 270 students completed the 4 day program. Due to demand, there were 5 CCM intakes in 1997.

Both programs were revised in 1997. A book written by Ann Brewer and David Hensher especially for the Australian Bus and Coach Industry, *Operating a Bus and Coach Business*, was published by Allen & Unwin in 1997.

Certificates of Logistics Management, Freight Management and Supply Chain Management

This new management program meets the needs of professionals involved in logistics, supply chain and freight transportation management. The program structure includes four core modules:

- Logistics and Supply Chain Systems and Principles
- Logistics and Supply Chain Problems and Applications
- Logistics, Freight and Supply Chain Seminar 1
- Logistics, Freight and Supply Chain Seminar 2

The additional modules for the Certificate of Logistic Management are:

- Management of Order Fulfilment Processes – Transportation and Order processing
- Management of Order Fulfilment Processes – Inventory, Storage and Materials Handling

The additional modules for the Certificate of

Freight Transport Management are:

- Freight Transport Operations
- Freight Transport Marketing

The additional modules for the Certificate of Supply Chain Management are:

- Supply Chain System Design
- Supply Chain Coordination

The remaining two elective modules may be chosen from the remaining modules in the Logistics and Freight Management Certificate program or other approved ITS modules.

The program got off to a great start in July 1997 with 31 students in the pilot intake; most of whom are undertaking all three certificates.

Student awards

In December, the CTM, CCM and CLM Certificate Presentation Dinner was held in conjunction with the Institute of Transport Studies end-of-year dinner.

The Bus and Coach Association (BCA) of NSW have announced support for the BCA Prize for the best student in the Certificate of Transport Management program, worth $250 in 1997. The inaugural prize was awarded to John Leonard.

Short Courses

Travel Activity Analysis and Methods

On 10-12 March 1997, the Institute of Transport Studies held a 3 day development course on Travel Activity Analysis and Methods. The course was presented by Professor Tom Golob from the University of California, Irvine and Professor David Hensher.

Discrete Choice Modelling and Analysis

On 21-23 July, there was a 3 day short course on "Discrete choice modelling in practice: Getting to know LIMDEP". The course was presented by Professor William Greene from New York University and Professor David Hensher. The course was very successful and was attended by 20 participants.

Geographic Information Systems

A one-day workshop to address technical and institutional issues in handling GIS data as well as three major applications in facilities management, fleet management and real-time transit dispatch, scheduling and customer services was held on 15 October. Speakers were Professor Ken Dueker, from the Portland State University; and Dr Tu Ton. The course was very successful and was attended by 8 participants.

Overseas Certificate Programs

Certificates of Logistics Management, Freight Management and Supply Chain Management

These Certificates were offered for the first time in Malaysia in June 1997. There were 15 students in the first intake.

Overseas workshops

David Hensher, together with Professor Jordan Louviere of the Department of Marketing, conducted a Short Course on Stated Choice Methods and Analysis at the Stockholm Institute of Technology, Sweden from 31 May to 5 June. There were 29 participants from 12 countries.

Distance education

CTM (Bus and Coach) and CCM (Coach) Western Australia

ITS is introducing a distance education format for CTM and CCM in Western Australia with the full support of the Department of Transport (Western Australia) and Bus and Coach Association (Western Australia). Ann Brewer has commenced development of the programs which is expected to be fully operational by mid 1998.

The introduction of these distance education programs for the bus and coach industry will ensure a major move to national accreditation. This is particularly significant since it is essential that operators who study in one State have their qualification recognised by all States in which they might operate (this being essential for coach operations and operators who provide other services across State borders).

The bus and coach programs provide operators with:

- A relevant education and training package in competency based format
- Effective assessment
- Practical delivery to cater for regional, rural or remote operators
- National recognition and portability of qualifications between States and Territories
- Identification of opportunities for continuously improving operator skills
- Affordability

The successful completion of these programs leads to a recognised qualification such as a Certificate of Transport Management (CTM) in bus and coach and CCM is an important recognition of achievement. The predominant qualification will be a CCM. There is unlikely to be more than 2 intakes for the CTM.

Logistics management program in Mauritius

ITS has been invited to offer the Logistics management program in Mauritius. However, the timing has yet to be decided.

ITS Monash

The education program at ITS Monash includes:

- PhD program;
- Master of Engineering Science by research;
- Master of Engineering Science by coursework and minor thesis;
- Graduate Diploma in Transport and Traffic; and
- Short courses and workshops.

PhD program

Hussien Dia, Brett Lemas and Henry Le graduated in 1997 with their theses titled Incident detection using artificial neural networks, A decision support system for pavement design and Modelling of small area traffic networks, respectively.

Students engaged in PhD research at ITS Monash (at the end of 1997) included:

Peter Daly: Modelling transport demand and parking management

Olle Norojono: Freight movement in Indonesia

Fotios Spiridonis: Equilibrium modelling of location choice

Master of Engineering Science by research

William Chandler has graduated after successfully completing his MEngSc (research) program on Procedural matters in land use transport planning.

In 1997, Darryn Paterson, commenced the Master of Engineering Science by Research with his project on Predicting the duration and effects of freeway incidents.

Master of Engineering Science by coursework

In 1997, 5 students commenced the Masters by coursework program and 3 student commenced the Graduate Diploma in Transport and Traffic Engineering, while 1 student graduated in the Graduate Diploma program. There are currently

a total of 17 students enrolled in the Masters by coursework program and 7 students in the Graduate Diploma in Transport and Traffic Engineering program.

Courses

Subjects taught by ITS Monash staff included:

Semester 1

- Road Safety (Daly)
- Transport Technology Assessment (Taylor and Rose)
- Project Management for Engineers (Young)

Semester 2

- Transport Policy (Ogden, Taylor, Wigan)
- Transport Network Models (Dia and Rose)

Student awards

The following prizes were awarded to students:

- CMPS and F prize in Highway Engineering to Cin Yee Hong and Teri Etchells
- Richardson prize in Transport to Chlodaugh Smith
- VicRoads postgraduate award to Craig McGeogh
- Turnbull and Fenner prize to Nicole Feore

Carlos Funes won the CAITR Student Award for the best prepared and presented paper by an undergraduate student at the 19th Conference of Australian Institutes of Transport Research hosted by ITS Monash.

Short courses

Parking Management Policy and Design

A 3 day short course on "Parking management policy and design" was run on 9 - 11 July. Presenters include Robert Belteky from KC Parksafe, Robert Morgan (a Parking Consultant), Dr Russell Thompson from Melbourne University, Michael Vulcan from James Hardie Building Services and Professor William Young.

Accident Investigation & Prevention Workshop

A 3 day workshop on "Accident Investigation & Prevention" was held on 14 - 16 July. The workshop, organised by Peter Daly, was very successful with over 60 participants in attendance. It was presented by experts in the field from VicRoads, RACV, MUARC, Local Government, Consultancy. Presenters include Peter Daly, Jim Jarvis from Monash University, Phillip Jordan from VicRoads, Raj Muthusamy from Road Safety Audits, Ken Ogden from RACV, Bruce Corben from MUARC and Joe Perone from City of Melbourne.

Distance education

Education Program in Bus and Coach, Victoria

Bill Young and Samantha Taylor have commenced development of the Certificate of Transport Management (bus and coach) in distance learning format for the Bus Association Victoria and the Department of Infrastructure. It is an adaptation of the successful CTM (bus and coach) format conducted in Sydney. It is expected to be fully operational in 1998. The certificate program aims to provide education on all aspects of bus and/or coach operations including managerial aspects, financial planning, the Passenger Transport Act, human resources, maintenance and safety.

Education Program in Parking Management

Bill Young has developed a distance education program in parking management for the parking industry. The program involves four subjects covering, Introduction to parking, Parking management, Parking design and policy and Parking technology & information collection.

Engineering Education Australia Program

Four subjects - Transport Data Analysis and Statistics, Transport Survey methods, Traffic Safety and Transport Cities and the Environment were run in the Engineering Education Australia Program by distance education.

7 PUBLICATIONS

Staff disseminate research and policy work through a wide range of publications from books, journal articles, conference proceedings, working papers and project reports.

Books and book chapters

Ann Brewer and David Hensher's book *Operating a Bus and Coach Business* was published by Allen & Unwin in 1997. It was promoted heavily at the 1997 Australian Bus and Coach Association Conference held in Adelaide, March.

The Austroads research report *Roads and the Community*, co-authored by David Hensher, was launched in Canberra in May.

Airline Deregulation in the Asia-Pacific: Towards "Open Skies", a publication of papers presented at the Twentieth Biennial Asian Studies Association of Australia Conference, July 9, 1996 was published in April, by ITS.

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- Chow, G., Adrangi, B. and Raffee, K. (1996) Passenger output and labour productivity in the U.S. airline industry after deregulation: A profit function approach, *The Logistics and Transportation Review*, 32 (4), 389 - 408.
- Golob, T.F. and Hensher, D.A. (1997) Driving behaviour of long distance truck drivers: the effects of schedule compliance on drug use and speeding citations, *International Journal of Transport Economics* XXII (3), 267-302.
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- Young, W. and Bowyer, D.P. (1996) Modelling the environmental impact of changes in urban structure, *Environment and Planning B*, 20 (4/5) 313-326

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- Brewer, A. (1997) Work design: the real barrier to flexible work scheduling and travel behaviour, *Papers of Australasian Transport Research Forum* 21, Adelaide, 235-247.
- Chow, G., Hashemi, R.R., LeBlanc, L.A., Hinson, W. and Al-Masyabi, W. (1997) A rough sets determination of financial variables most influential in predicting motor carrier failures in *Proceedings of the Canadian Transportation Research Forum*, University of Saskatchewan Printing Services, Montreal, Canada.
- Daly, P. (1997) Inquiry skills in engineering curricula - Accident investigation as a teaching vehicle, *Proceedings of the 2nd International Conference on Accident Investigation, Reconstruction, Interpretation and the Law, Brisbane*.
- Dia, H. and Rose, G. (1997) A variable threshold incident detection model, *Journal of the Eastern Asia Society for Transportation Studies*, 2 (4), 1329-1345.
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- Yue, W.L. and Young, W. (1997) An introduction of a parking design and simulation model, *Journal of the Eastern Asia Society for Transportation Studies*, 2 (2), 595-614

Workshop Reports

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- Hensher, D. and Golob, J. (1997) Telecommunications - Transport Interaction Workshop Report, 8th International Conference on Travel Behaviour Research, Austin, Texas.

ITS Working Papers

All Working Papers may be purchased from ITS.

ITS-WP-97-1

Greenhouse Gas Emissions and Australian Commuters' Attitudes and Behaviour Concerning Abatement Policies and Personal Involvement (Tom Golob and David Hensher)

Abstract

Public interest in the environment is building as we gain information about the deterioration in air quality and the potential threat of global warming. This research addresses the dichotomy between an individual's behaviour and his or her attitudinal support for policies which are promoted as benefiting the environment. We study how responses to attitudinal survey questions are interrelated, and how such responses are related to actual travel behaviour using data from a survey undertaken in six capital cities in Australia in 1994. A measurement model is used to establish a set of latent attitudinal factors, and these factors are related in a structural equations model to a set of behavioural variables representing commuter's mode choice and choice of compressed work schedules, conditioned by a set of exogenous variables. We find that individuals with a strong environmental commitment are more likely to be female, from smaller households with fewer cars, be either under 30 years old or over 50 years old, have high household income and be highly educated. However, women are likely to view the car as a status symbol, and this attitude is conducive to choice of solo driving. We also find that mode choice influences attitudes; commuters who use public transport are more likely to support policies aimed at reducing greenhouse gas emissions. Our conclusion is that switching commuters away from solo driving can have effects that transcend the benefit obtained from reduced vehicle use for the journey to work alone.

ITS-WP-97-2

Intelligent Transport Systems – A New Era in Telematics Technology (Tu Ton)

Abstract

Urban road traffic congestion problems which accounts to some substantial loss to the economy can only be reduced if the interaction between vehicles, infrastructure and transport management can be handled in a more efficient way. The emerging Intelligent Transportation Systems (ITS) or Transport Telematics technologies do, however, address many of the contributing factors which provide significant improvements in highway safety, mobility, and accessibility. This paper provides a snapshot of the latest information on the progress of transport telematics. It presents the result of the literature review of progress reports of transport telematics from America and Europe. The aim of this paper is to address the question of what is transport telematics and provide the progress report of the application of telematics technologies in the transport sector. It focuses on the issue of selecting of suitable system architecture and the associated technologies of transport telematics. A summary report on the cost analysis and benefits evaluation of transport telematics in America and Australia is included. The paper concludes with a summary of number of issues in the implementation of intelligent transport systems.

ITS-WP-97-3

Productivity of Australian Container Terminals: Some Critical Issues (Ross Robinson and Sophia Everett)

Abstract

This paper is a modified version of a Report *Stevedoring Productivity at Australian Container Terminals: a Review* which was prepared for the Western Australian Department of Transport and which was completed in April 1996. The Department was concerned at the continuing low levels of stevedoring productivity at Australian container terminals generally - despite an intensive waterfront reform program - and at terminals in the Port of Fremantle more particularly. The conventional wisdom was that low productivity was a function of a number of factors - inadequate infrastructure, poor equipment, bad work practices, poor labour relations; but in our view the central issue was, and remains, the inadequacy of the policy framework erected on Enterprise Based Agreements (EBAs) and set in place under the WIRA arrangements by the end of 1991. The initial Report focused on this issue with specific reference to the EBA framework adopted by P&O Ports; and to the new Productivity Employment Proposal or PEP scheme mooted by the company.

Specific reference was also made to the Port of Fremantle where both major stevedoring companies - P&O Ports and Patrick - were operating under EBAs. In 1996 the industry is still some way off an appropriate framework and mechanisms for achieving higher stevedoring productivity - the PEP scheme is still under scrutiny; Patrick, despite a prolonged and often acrimonious debate with its Union counterpart, found it necessary to resort to arbitration to revise its EBA; and the proposed Australian Workplace Agreements of the new coalition Government will enter into law in 1997. Not surprisingly, our research is continuing!

ITS-WP-97-4

Establishing Fare Elasticity Regimes for Urban Passenger Transport: Time-Based Fares for Concession and Non-Concession Markets Segmented by Trip Length (David Hensher and Jenny King)

Abstract

The missing ingredient in many operational studies of public transport patronage prediction is a matrix of direct and cross fare elasticities which relate to specific fare classes within a choice set of fare class opportunities. This paper uses a heteroskedastic extreme value choice model to relax the constant variance assumption of the multinomial logit model so that empirically realistic cross elasticities can be obtained. A combined stated preference and revealed preference data set collected in Newcastle (New South Wales) in 1995 is used to obtain a matrix of direct and cross elasticities which reflects the market environment in which individuals, entitled to concession and non-concession travel by public transport for short and long trips, make choices while benefiting by a richer understanding of how travellers respond to fare profiles not always observed in real markets, but including fare profiles which are of interest as potential alternatives to the current market offerings. The primary aim is to determine the sensitivity of Newcastle residents to the introduction of time-based bus fares. The four types of time-based bus fares proposed and studied are the 1 hour ticket, 4 hour ticket, day ticket and weekly ticket. The elasticities obtained from the study indicate the level of switching between ticket types and between the car and bus modes for any given change in fare levels or types.

ITS-WP-97-5

Asian Hub/Feeder Nets: The Dynamics of Restructuring (Ross Robinson)

Abstract

In less than 25 years containerisation has restructured the way in which regional Asia handles its manufactured and break-bulk cargoes. In 1972 the commissioning of the purpose-built container terminals in Hong Kong and Singapore focused container shipping services, and particularly the trans-Pacific and the traditional Far-East/Europe services, into hub/Feeder networks in which the two ports were the undisputed first order centres. Somewhat later, Kaohsiung and to a lesser extent Pusan, developed as important hubs. But now, in the mid 1990's, earlier and simpler structures of hub/feeder networks are being quickly transformed into much more complex patterns. Continuing high growth rates of containerised cargo, an increased number of ports with relatively high throughputs and the simple proliferation of ports - particularly but not only in China - have been important factors; but the reorganisation of global liner shipping into a small number of alliances capable of operating larger ships, more complex service patterns and with exceptional market power has been critical. The new shipping networks will be hierarchically organised with high cost-high efficiency first order ports serving high cost-high efficiency shipping services and lower cost-lower efficiency ports serving appropriately segmented shipping markets. In the longer term former feeder ports may be linked into direct call networks; but in practice hub/feeder operations will continue over a long period of time.

ITS-WP-97-6

Establishing a Fare Elasticity Regime for Urban Passenger Transport: Non-Concession Commuters (David Hensher)

Abstract

The missing ingredient in many operational studies of public transport patronage prediction is a matrix of direct and cross fare elasticities which relate to specific *fare classes* within a choice set of fare class opportunities. This paper uses a heteroskedastic extreme value choice model to relax the constant variance assumption of the multinomial logit model so that empirically

realistic cross elasticities can be obtained. A combined stated preference and revealed preference data set collected in Sydney in 1995 is used to obtain a matrix of direct and cross elasticities which reflects the market environment in which commuters make choices while benefiting by a richer understanding of how travellers respond to fare profiles not always observed in real markets, but including fare profiles which are of interest as potential alternatives to the current market offerings.

ITS-WP-97-7

Reforming Ports: Issues in the Privatisation Debate (Ross Robinson and Sophia Everett)

Abstract

Privatisation and corporatisation strategies are part of an ongoing microeconomic reform program aimed at commercialising and raising efficiency in the public sector. Within this ethos, ownership and efficiency are perceived to be inextricably linked. This paper examines port reform strategies implemented in Australia in recent times in particular in light of efficiency improvements. It raises also some unresolved social and policy issues associated with public ownership of commercial and profit oriented business and the provision of public good.

ITS-WP-97-8

Combining Sources of Preference Data: The Case of the Lurking λ's (David Hensher, Jordan Louviere and Joffre Swait)

Abstract

This paper brings together several research streams and concepts that have been evolving in random utility choice theory: first, it reviews the literature on stated preference (SP) elicitation methods and introduces the concept of testing data generation process invariance across SP and revealed preference (RP) choice data sources; second, it proposes a general data generation process an useful framework for viewing this data combination process; third, it describes the evolution of discrete choice models within the random utility family, where progressively more behavioural realism is being achieved by relaxing strong assumptions on the role of the variance structure (specifically heteroscedasticity) of the unobserved effects. This latter topic is central to the issue of combining multiple data sources. Particular choice model formulations incorporating heteroscedastic effects are presented, discussed and applied to data. The rich insights possible from modeling heteroscedasticity in choice processes is illustrated in each of the empirical applications, which examine its relevance to issues of data combination and taste heterogeneity.

ITS-WP-97-9

Liberalising Airline Competition in India - Relevant Lessons from the Australian Experience (Paul Hooper)

Abstract

As the commercial airline industry developed during the 1940's and 1950's, there was universal acceptance of the need to control entry, to regulate fares and to encourage airlines to cross-subsidise unprofitable services. By 1978, however, practitioners and academics in the USA mounted a forceful case that the nation's consumers would be better off in a deregulated environment and many other countries have followed suit since then. India is one of a number of Asian countries that have become recent converts to liberalism, but in formulating policies there are problems in translating the experiences of the USA. India's airline market is relatively undeveloped and air transport plays a vital role in supporting national objectives. This paper examines the parallels between Australia and India because, like India, Australia deregulated when it had two national carriers. Australia's domestic airline market is concentrated on a small number of routes and the remainder of the network lacks the density of traffic to promote competition, but airline services are regarded as a vital part of the infrastructure to support the tourism sector. The paper evaluates the experiences in Australia in terms of their relevance to India as it continues to develop its policies and as the carriers seek to develop viable strategies.

ITS-WP-97-10

Markets, Government and Environmental Policy Issues for Public Transit (David Hensher & Michael Beesley)

Abstract

This paper considers the wider transport policy implications of bus deregulation, especially the

links with environmental objectives. The major themes are the role of markets in creating opportunities through incentives to innovate which impact positively on the environment without the intervention of government, but which accord with political agendas, defining an appropriate set of goals and performance criteria for urban passenger transport which give credence to environmental sustainability, distinguishing outcome and outputs and structuring the regulator to deliver. We use the experience with mini-buses in Britain to show how markets create environmentally compatible incentives.

ITS-WP-97-11

The Future of Exclusive Busways: The Brazilian Experience (Neil Smith & David Hensher)

Abstract

This paper examines the operation of urban bus transport systems based upon exclusive bus roadways (busways) in three cities in Brazil. The historic, economic, political, regulatory and operating context for these services is discussed. The strengths and weaknesses of busway systems in Curitiba, Porto Allegre and Sao Paulo are compared, with particular reference to the operating capacity of the busways. The paper concludes with an assessment of the importance of operations techniques, infrastructure development, land use planning, political stability and regulation to the success or failure of these systems.

ITS-WP-97-12

Developments in the Aviation Industry in Australia and Asia - Implications for Australian Tourism, (Paul Hooper)

Abstract

The Asia-Pacific region is expected to be the main region of growth in airline travel for at least the next two decades. According to the forecasts, China will become one of the largest domestic airline markets in the world alongside Japan, already one of the most significant domestic markets outside the USA. The inability of the government-owned airlines in the region to cope with rapid growth and with the need to upgrade their services in domestic markets has resulted in major changes in policy. As a result, new airlines have been permitted to operate in South Korea, Taiwan, the Philippines, Indonesia, India, Nepal and Pakistan with governments adopting a more liberal attitude towards competition. A common experience has been that the new airlines cannot survive on a domestic base and a number of countries have allowed the new carriers to fly international routes. These new airlines are more likely to fly between regional centres and so take away some of the pressures on the key hub airports that tend to be congested. Also, they provide direct links to tourist attractions away from the main metropolitan centres in Australia. This paper analyses these trends in aviation in the Asian region and explores their implications for the continuing development of Asian markets by Australian airlines and the tourism sector.

ITS-WP-97-13

Evaluating Minimum Service Levels for Bus Services - Using Geographical Information Systems (Tu Ton)

Abstract

Under the New South Wales Passenger Transport Act 1990, each commercial contract for providing a bus service must stipulate a scale of minimum service levels. It is a means for the Government to ensure that all the residents of communities which have similar population densities receive an appropriate minimum level of services from the bus operator. It can also be viewed as a marketing tool that can be used by bus operators to increase patronage and revenue. The minimum service levels policy is based on population level, car ownership and the competing passenger transport services. The key requirement in the minimum service levels estimation procedure is to measure the spatial relationship between residential areas and transport modes under consideration. Conventionally, the approach has been to visually inspect a paper map to extract population and car ownership statistics affected by different transport modes. Today, with GIS, this procedure can be automated and dealt with on a much larger scale, enabling results to be more accessible to end users. This paper describes the process of enabling GIS analysis in a case study for a regional New South Wales town.

ITS-WP-97-14

"Open Skies" in India - Is it succeeding? (Paul Hooper)

Abstract

With a "middle class" of 200 million people in a large country where travel between the major population centres by surface transport can be arduous, India has a potentially large domestic airline market. In the post-World War II period, India nationalised its airline industry into one international carrier, Air India, and one domestic carrier, Indian Airlines, but it began to relax these controls in 1986. Since then, a series of policy initiatives introduced what is proclaimed to be an "open skies" policy. There has been no shortage of new entrants willing to add capacity into a system where supply-side constraints are regarded as the main impediment to a boom in airline travel. However, many of these new ventures have failed within a few years and the remaining carriers, including Indian Airlines, have had to increase fares in an attempt to improve their financial performance. Far from being an "open skies" environment, airline managers continue to be subject to formal and informal government regulations and government has introduced new taxes and increased charges for aviation services. The result is an industry characterised by financial instability and low traffic growth. This paper documents the changes in the regulatory system and analyses the strategies adopted by the airlines. The paper concludes that inappropriate policies are constraining development of the industry, particularly the requirement imposed by the Government for the airlines so allocate their capacity on a mix of profitable and unprofitable routes.

ITS-WP-97-15

Imposing Symmetry on a Complete Matrix of Commuter Travel Elasticities (John H.E. Taplin, David Hensher and Brett Smith)

Abstract

Travel price and time elasticities are increasingly being derived from discrete choice models of the multinomial or nested logit form. These elasticities are then applied to obtain predictions of changes in travel demand consequent on a policy change in prices and travel times. The majority of the choice elasticities are estimated within the behavioural setting of modal choice, holding total travel fixed. A few mode choice models have recently relaxed the strong assumption of constant variance in the random components of the indirect utility function to enable the derivation of behaviourally meaningful cross choice elasticities. Under constant variance, only the direct choice elasticities have behavioural meaning. While this advance in discrete choice modelling is to be applauded, the procedures used derive share elasticities conditional on a fixed total demand, and in addition make no corrections for two important conditions required to 'convert' the choice elasticity matrix into a demand elasticity matrix - namely symmetry and share weighted column sums. This paper takes a set of empirical choice elasticities and shows the procedures required to adjust these elasticities to arrive at a matrix of demand elasticities. We draw on a recent data set collected in Sydney which utilises revealed preference and stated choice data to estimate a joint model of ticket choice conditional on mode and choice of mode for commuter travel.

ITS-WP-97-16

Attitude and Travel Behaviour Change Using Survey Feedback: Insight from Dutch and Australian Experience (Geoff Rose)

Abstract

Travel demand management (TDM) addresses the problems of energy consumption and pollution associated with increased motor vehicle use through strategies focused on improving asset utilisation, physical restraint, pricing, and urban and social changes. This paper concerns the last of these areas and examines programs aimed at changing attitudes and subsequently travel behaviour through individual measurement and personalised information. While Australian research results reviewed here are encouraging, results from the Netherlands highlight psychological processes which can reduce the effectiveness of these programs. This research area has important implications for the development of information campaigns designed to influence travel behaviour.

ITS-WP-97-17

Reducing Car Travel Through an 'Individual Action' Programme (Geoff Rose and Elizabeth Ampt)

Abstract

This paper outlines a new approach to reducing car use in order to address environmental concerns. The individual action programme, known as travel blending, has been developed as part of the NRMA Clean Air 2000 Campaign and aims to encourage individuals to choose a mixture, or blend, of travel choices over time to satisfy their travel needs rather than being a captive of the private car. Participating households are sent a series of four kits, containing information booklets and travel diaries, over a nine week period. The travel diaries and vehicle log books are analysed and a summary of the household's travel patterns, and the emissions produced by their vehicles, is sent back in a subsequent kit along with suggestions explaining how they could introduce travel blending into their travel patterns. Households complete another set of diaries and vehicle log books after four weeks and these are analysed so that a comparative summary can be returned to the household with the final kit. The paper describes results from a pilot study, involving about 50 individuals, undertaken in Sydney, Australia. The encouraging results from the pilot have resulted in preparations being made for a larger trial.

ITS-WP-97-18

Proceedings of CAITR'97 - The 19th Conference of the Australian Institutes of Transport Research (edited by Peter Daly)

Abstract

This working paper contains the collected papers presented at the 19th Conference of the Australian Institutes of Transport Research hosted by the Institute of Transport Studies Monash University between 24th and 26th November 1997. A brief summary of the conference themes and highlights is provided as well as a discussion on the future dissemination of research reported at CAITR. A full list of attendees with affiliated organisations and prize winners is included. The papers themselves are unedited copies of the originals provided to the conference organisers.

ITS-WP-97-19

Interpreting Commercial Vehicle Survey Data (Samantha Taylor and Ken Ogden)

Abstract

Analytical rigour in statistical analysis is often taken for granted. Although every effort may be made in the initial phases, there may be several factors which influence the resulting accuracy of data. This paper describes some fundamental post-survey statistical analyses, with particular reference to commercial vehicle surveys. The greater Sydney region Commercial Vehicle Survey is used to illustrate how data can be misinterpreted if errors are not quoted or calculated properly. Stratification of samples, response rates, means, medians, data distribution and sampling errors using the relative standard error, are all discussed with emphasis on the role and calculation of each, and how easily the data and statistics can be misinterpreted.

ITS-WP-97-20

Technology Application for Freight Data Collection (Samantha Taylor)

Abstract

This paper looks at the application of GPS, GIS, wireless communication networks and Personal Digital Assistant (PDA) technology to freight data collection. The Transport Research Centre is undertaking a Freight Activity and Commercial Travel Survey (FACTS) which aims to use this technology to collect metropolitan road based freight data in Melbourne. FACTS is currently at the prototype development stage and consists of a GPS based tool to automatically collect location and route choice information, and an electronic touch screen questionnaire to collect data on vehicle stops, the driver and the vehicle. This paper explains the prototype development.

ITS-WP-97-21

How Productive are Commercial Vehicles (Samantha Taylor and Ken Ogden)

Abstract

This paper investigates results pertaining to logistics and the productiveness of commercial vehicles in the greater Sydney metropolitan region. The paper uses the 1991/1992 Commercial

Vehicle Survey (CVS) undertaken by the Transport Data Centre at the Department of Transport in New South Wales, Australia. There are several significant results from the CVS which prima facie show that vehicle productivity could be improved. These relate to the proportion of the vehicles working on an average week day, the average number of trips made on any one day, and the average time spent travelling each day. Notwithstanding the fact that these results could be biased due to survey response factors and the knowledge that there was a recession in 1991/1992, the results are apparently significantly low. This paper discusses and speculates as to the reasons for this and also discusses some statistical issues that impact on the conclusions drawn.

Project reports

High speed rail in the Sydney-Canberra Corridor: Review and Update of ITS's 1994 Speedrail Study, Report for GEC-ALSTHOM (UK), Transport Division (Hensher, Hooper and King).

Electronic Data Interchange. Report on the Introduction of Electronic Data Interchange, Report for the International Council of the Chartered Institute of Transport, London (Hooper).

ITS International Bus and Coach Performance Benchmarking Program 1995-96: Summary of Results, Report for members of the ITS International Bus and Coach Performance Benchmarking Program 1995-96 (Hensher, King and Leonard).

Evaluating Minimum Service Levels (MSL) for Bus Services Using Geographical Information Systems, Report for Blue Ribbon Coaches and Travel (Ton).

African Islands Airways - The Economic Case for Mauritius and the Region, Report for African Islands Airways, Mauritius (Hooper).

Roads as Our Most Important Public Transport Asset, Short document prepared for the Chief Executive of the Roads and Traffic Authority of NSW, to assist in the marketing of freeways and tollroads (Hensher).

Report on Service Delivery and Communications, Report for Board of Airline Representatives of Australia Inc. (BARA) (Brewer).

Report on BARA's Management, Human Resource and Performance Strategy, Report for Board of Airline Representatives of Australia Inc. (BARA) (Brewer).

Reforming Ports: Issues In The Privatisation Debate, Report for The Australian Chamber of Shipping (Everett and Robinson).

Malaysian Flag Shipping and the Balance of Payments: The Key Issues, Report for The Malaysian Government (Everett and Robinson).

Malaysian Cargo Through Malaysian Ports: Defining Appropriate Policies?, Report for The Malaysian Government (Everett and Robinson).

Stevedoring Productivity at Australian Container Terminals: a Review, Report for The WA Department of Transport (Everett and Robinson).

The Impact of Efficiency Improvements in Container Handling Operations on the Australian Economy, Research Report for P&O Ports (Everett and Robinson).

Accepted for publication

- Brewer, A. and Hensher, D.A. (forthcoming) The importance of organisational commitment in managing organisational change in the bus industry in Australia, *Transportation Research E*.
- Dia, H. and Rose, G. (in press) The impact of data quantity on the performance of neural network freeway incident detection models in Reggiani, A., Himanen, V. and Nijkamp, P. (eds) *Neural Nets in Transport*, Elsevier, UK.
- Dia, H. and Rose, G. (forthcoming) Development and evaluation of neural network freeway incident detection models using field data, Special issue of *Transportation Research Part C 'Applications of Neural Networks in Transport', Dougherty, M. (Guest Editor)*.
- Dia, H. and Rose, G. (forthcoming) A dynamic decision threshold neural network incident

detection model, Special issue of the *Journal of Computer-Aided Civil and Infrastructure Engineering 'Advanced Computer Technologies in Transportation Engineering'*.

- Everett, S. (forthcoming) Port corporatisation in Australia: Dilemmas of microeconomic reform, *Policy Organisation and Society* Winter.
- Everett, S. and Robinson, R. (forthcoming) Reforming ports: Issues in the privatisation debate, *Maritime Policy and Management*.
- Everett, S. and Robinson, R. (forthcoming) Deregulation of Australian flag shipping: A policy perspective, *Maritime Policy and Management*.
- Golob, T.F. and Hensher, D.A. (forthcoming) Greenhouse gas emissions and the Australian commuter attitudes and behaviour concerning abatement policies and personal involvement, *Transportation Research D* 2.
- Hensher, D.A. (in press) Extending valuation to controlled value functions and non-uniform scaling with generalised unobserved variances (invited paper presented at the International Conference on the Theoretical Foundations of Travel Choice Models, Stockholm), in Garling, T., Laitila, T. and Westin, K. (eds) *Theoretical Foundations of Travel Choice Models*, Elsevier, The Netherlands.
- Hensher, D.A. (in press) The timing of change for automobile transactions: A competing risk multispell specification, in Ortuzar, J., Jara-Diaz, S. and Hensher, D.A. (eds) *Travel Behaviour*, Pergamon Press, Oxford (previously presented at 7th International Conference on Travel Behaviour 1994).
- Hensher, D.A. and Golob, T. (forthcoming) Telecommunications-Travel Interactions, in Mahmassani, H. (ed.) *Traveller Behaviour Research*, Pergamon Press, Elsevier Science.
- Hensher, D.A. (forthcoming) Intercity rail services: Evaluating pricing options, *Journal of Advanced Transportation*.
- Hensher, D.A. (in press) Establishing a fare elasticity regime for urban passenger transport: Non-concession commuters, *Journal of Transport Economics and Policy*.
- Hensher, D.A. and King, J. (forthcoming) Establishing a fare elasticity regime for urban passenger transport: Concession and non-concession market segments by trip length, *Journal of Transportation and Statistics*.
- Hensher, D.A., Louviere, J. and Swait, J. (forthcoming) Combining sources of preference data: The case of the lurking lambdas, *Journal of Econometrics*.
- Hooper, P. (forthcoming) Liberalising airline competition in India, *Journal of Air Transport*.
- Hooper, P. and Hensher, D.A. (forthcoming) An application of the total factor productivity approach to measuring the performance of airports, *Transportation Research E*.
- Ogden, K., Russell, E.W., Taylor, S.Y. and Cox, J.B. (forthcoming) Refocusing Transport Reform *Business Council of Australia*.
- Robinson, R. (forthcoming) Asian hub-feeder nets: The dynamics of restructuring, *Maritime Policy and Management*.
- Taylor, S.Y. and Ogden, K. (forthcoming) How productive are commercial vehicles?, *Journal of Transport Logistics*.

8 PARTICIPATION

Conferences chaired

- Discussant, Annual Meeting of the Transportation Research Board, Session 412, Planning Applications of Freight Transportation Indicators, Washington D.C., 16 January (Chow)
- Chairman, Day 1, Waterfront Reform, Ports and Shipping Conference, Sydney, 12-13 March (Robinson)
- Executive Chair and Chair of Workshop on Broader Policy Issues, 5th International Conference on Competition and Ownership in Land Passenger Transport, Leeds, 27-30 May (Hensher)
- Plenary address and Workshop Chairperson, 5th International Conference on Competition and Ownership in Land Passenger Transport, Leeds, 27-30 May (Hensher)
- Session Chair on Airport Performance, First Conference of Air Transport Research Group Meeting, World Conference on Transport Research Society, University of British Columbia, Vancouver B.C., 25-27 June (Hooper)
- Chair of closing session, First Conference of Air Transport Research Group Meeting, World Conference on Transport Research Society, University of British Columbia, Vancouver B.C., 25-27 June (Hooper)
- Chaired, National Tourism Research Conference on Tourism Research Building a Better Industry, Manly, Sydney, 6-9 July (Hooper)
- Chaired, What can you do with a Civil Engineering degree? Three women talk about their careers, Melbourne, 5 August (Taylor)
- Chaired, Vision for the future of Australia, Melbourne, 19 August (Taylor)
- Chaired, Day 2, Road Safety and Traffic Enforcement - Challenges for the 21st Century, Melbourne, 20-21 August (Daly)
- Gave address as President of IATBR, 8th International Conference on Travel Behaviour Research, Austin, Texas, 21-25 September (Hensher)
- Chaired IATBR Annual Board Meeting, 8th International Conference on Travel Behaviour Research, Austin, Texas, 21-25 September (Hensher)
- Workshop Chair, Telecommunications-Transport Interaction, 8th International Conference on Travel Behaviour Research, Austin, Texas, 21-25 September (Hensher)
- Round Table Discussant, Australasian Transport Research Forum 21, National Infrastructure, Adelaide, South Australia, 24-26 September (Waters)
- Chair, Understanding Traffic Signals in Melbourne, Melbourne, 15 October (Taylor)
- Executive Chair, 19th Conference of Australian Institutes of Transport Research, Monash University, 24-26 November (Daly)
- Chaired AIC Conference on Urban Transport Strategy, Sydney, 10-11 December (Hensher)

Unpublished conference and seminar presentations

- Invited speaker on Airline competition in Asia. How relevant are the experiences of developed countries?, Transport Geography Research Group Session on “Transport Deregulation and Privatisation”, the Royal British Geographers and Regional Geography Association Conference Annual Conference, University of Exeter, Exeter, UK, 8 January (Hooper)
- Invited speaker on Liberalisation of airline competition in Asia, Transport and Logistics Group, Faculty of Commerce and Business Administration, University of British Columbia, 20 January (Hooper)
- Invited speaker on The implications of aviation policy for tourism resort regions, Australian Institute of Management and Chartered Institute of Transport (Gold Coast), Marriott Hotel, Surfers Paradise, 5 March (Hooper)
- Why productivity will not improve in Australian container terminals, Waterfront Reform, Ports and Shipping Conference, Sydney, 12-13 March (Robinson)
- Recent developments in discrete choice modelling, Department of Marketing students and staff Faculty of Economics at Sydney University, 12 and 26 March (Hensher)
- Panel member, The Hilmer Report: Vision or reality?, Australian Bus and Coach Association Conference, Adelaide, 16-19 March (Hensher)

- Panel members for Public transport planning forum, Australian Bus and Coach Association Conference, Adelaide, 16-19 March (Hensher and Ton)
- Technological innovations for urban bus services, Australian Bus and Coach Association Conference, Adelaide, 16-19 March (Hensher and Ton)
- RouteInfo: An innovative tool for supporting bus route planning, Australian Bus and Coach Association Conference, Adelaide, 16-19 March (Hensher and Ton)
- Invited participant in round table discussion on Open skies in the Asia Pacific? Issues confronting Australian civil aviation, Australia-Japan Research Centre, University House, Australian National University, Canberra, 3 April (Hooper)
- A rough sets determination of financial variables most influential in predicting motor carrier failures, Logistics Education Forum at University of Technology, Sydney, 17 April (Chow)
- A profile of the senior logistics executive in North America, Logistics Education Forum at University of Technology, Sydney, 17 April (Chow)
- Enhancing engineering management education through research, Engineering Managers Education conference, Adelaide, 17-18 April (Young)
- Combining multiple sources of preference data, Department of Information Management, University of WA, 1 May (Hensher)
- Invited paper, Transport needs for tourism, Institution of Engineers Australia, Transport Engineering Panel, Harricks Auditorium, Milsons Point, Sydney, 6 May (Hooper)
- Invited position paper, Competition, ownership and wider transport policy issues, 5th International Conference on Competition and Ownership in Land Passenger Transport, Leeds, 27-30 May (Hensher and Beesley)
- Designing the optimal tertiary OR/MS curriculum for the future, Australian Society for Operations Research Incorporated, North Sydney, 27 May (Chow)
- Third party logistics trends in North America and case studies in supply chain management, Logistics Management Association, Crown Casino, Melbourne, 6 June (Chow)
- The transformation from transportation to logistics company, The Chartered Institute of Transport NSW Section, Hyde Park Hotel, Sydney, 11 June (Chow)
- Program Evaluation, Accident Investigation ad Prevention Workshop (AIPW), Melbourne, 16 June (Taylor)
- AUSPECC observer, APEC Transport Ministerial and Industry Forum, Victoria B.C., 21-22 June (Hooper)
- “Open Skies” in India - Is it succeeding?, First Conference of Air Transport Research Group Meeting, World Conference on Transport Research Society, University of British Columbia, Vancouver B.C., 25-27 June (Hooper)
- Panelist on Liberalisation and open skies in Asia, First Conference of Air Transport Research Group Meeting, World Conference on Transport Research Society, University of British Columbia, Vancouver B.C., 25-27 June (Hooper)
- Supply chain management and outsourcing: Implications for the freight transport industry, The Bureau of Transport and Communications Economics, Australian Department of Transport, Canberra, 30 June (Chow)
- The Transport Challenge For Our Cities, Rotary (Eastern Suburbs), 9 July (Hensher)
- Freight Activity and Commercial Travel Survey, presented at IEAust Seminar Series, Melbourne, 16 July (Taylor)
- What can you do with a Civil Engineering degree? Three women talk about their careers, Melbourne, 5 August (Taylor)
- Deregulation, reregulation and regulatory shifts in North American Transportation and Telecommunications, Department of Information Management and Marketing, University of Western Australia, Perth, 12 September (Waters)
- Panel member, Plenary closing session on Future directions in transport research and implications for transport research organisations, the 21st Australasian

Transport Research Forum, Adelaide, 26 September (Waters)

- Education programs in bus & coach management, Bus Association of Victoria Management Forum, Melbourne, 8 October (Taylor and Young)
- Panel member, Public transit in major cities in Eastern Asia, 2nd Conference of the Eastern Asia Society for Transportation Studies, Seoul, Korea, 30 October (Rose)
- The link between total factor productivity, pricing and financial performance - Results for Canadian railways and major world airlines, Department of Economics, University of Sydney, 3 November (Waters)
- Overblown! Assessing the costs and benefits of automotive airbags, Department of Economics, Monash University, Melbourne, 5 November (Waters)
- Deregulation, reregulation and regulatory shifts in North American Transportation and Telecommunications, Bureau of Transport and Communications Economics, Canberra, ACT, 11 November (Waters)
- The link between total factor productivity, pricing and financial performance - Results for Canadian railways and major world airlines, Department of Economics, University of Queensland, Brisbane, 21 November (Waters)
- Report on research at ITS Sydney and ITS Monash, 19th Conference of Australian Institutes of Transport Research, Monash University, Melbourne, 24-26 November (Brewer and Young)
- A study of resident's perceptions of road based traffic noise on the South Eastern Freeway, Malvern, 19th Conference of Australian Institutes of Transport Research, Monash University, Melbourne, 24-26 November (Callaghan and Daly)
- Interactive choice experiments and agency interdependencies, 19th Conference of Australian Institutes of Transport Research, Monash University, Melbourne, 24-26 November (Hensher)
- A comparison of the predictive potential of artificial neural networks and nested logit models for commuter mode choice, 19th Conference of Australian Institutes of Transport Research, Monash University, Melbourne, 24-26 November (Hensher and Ton)
- Development of a freeway incident duration and effects model, 19th Conference of Australian Institutes of Transport Research, Monash University, Melbourne, 24-26 November (Paterson)
- Travel blending: an Australian travel awareness initiative, 19th Conference of Australian Institutes of Transport Research, Monash University, Melbourne, 24-26 November (Rose and Ampt)
- Technology applications for freight data collection, 19th Conference of Australian Institutes of Transport Research, Monash University, Melbourne, 24-26 November (Taylor)
- The link between total factor productivity (TFP), prices and financial performance, with summary illustrations from air and rail transportation, 19th Conference of Australian Institutes of Transport Research, Monash University, Melbourne, 24-26 November (Waters)
- Invited paper, Australia's concerns regarding the regulatory changes in international transport, The Asia Pacific Transport Conference, Pacific Economic Cooperation Committee, Seoul, South Korea, 4-6 December (Hooper and Findlay)
- Invited paper, The prospects for regulatory changes in international transport in Asia Pacific, The Asia Pacific Transport Conference, Pacific Economic Cooperation Committee, Seoul, South Korea, 4-6 December (Findlay and Hooper)
- The Role of Roads in the Transport Task, Keynote address to AIC Conference on Urban Transport Strategy, Sydney, 10-11 December (Hensher)
- Parking Strategies for the Year 2010. AIC Conference on Urban Transport Strategy, Sydney, 10-11 December (Young)
- Issues in measuring freight demand and forecasting truck freight flows, Bureau of Transport and Communications Economics, Canberra, 16 December (Young)

Conference and seminar attendance

- The Royal British Geographers and Regional Geography Association Conference Annual Conference, University of Exeter, 7-10 January (Hooper)
- The Intelligent Transport Systems Australia Conference, Brisbane, 11 - 14 March (Dia, Rose and Taylor)
- 8th Annual Conference on Waterfront Reform, Ports and Shipping, The Hotel Inter-Continental, Sydney, 12 - 13 March (Everett and Robinson)
- Australian Bus and Coach Association Conference, Adelaide, 16-19 March (Brewer, Hensher, Ton)
- Michael Porter's Conference on Gaining and Sustaining Competitive Advantage, Rydges Wentworth Hotel, Sydney, 10 April (Brewer, Everett, Hensher and Robinson)
- Engineering Management Education Conference, Adelaide,17-18 April (Young)
- Scandinavian Value of Travel Time Savings Workshop, Oslo, 22-23 May (where the early work of Hensher on value of business times was honoured by naming the model as the 'Hensher Formula') (Hensher)
- 5th International Conference on Competition and Ownership in Land Passenger Transport, Leeds, 27-30 May (Hensher)
- First Conference of Air Transport Research Group, World Conference on Transport Research Society, Vancouver B.C., 25-27 June (Hooper)
- Roads in the Community, Melbourne, 26 June (Taylor)
- National Tourism Research Conference on Tourism Research Building a Better Industry, Manly, Sydney, 6-9 July (Hooper)
- Olympic Roads and Transport Authority, Olympic Transport Strategy Workshop, The Holroyd Centre, Merrylands, Sydney, 16-17 July (Bode)
- Vision for the future of Australia, Melbourne, 19 August (Rose, Taylor)
- Universities Olympic Workshop, University of New South Wales, Sydney, 31 July (Bode)
- Road Safety and Traffic Enforcement - Challenges for the 21st Century, Melbourne, 20-21 August (Daly and Taylor)
- Women & Leadership 1997, Melbourne, 8 September (Taylor)
- Transport and the Environment, IEAust Seminar Series, Melbourne, 10 September (Rose, Taylor)
- 21st Australasian Transport Research Forum, Adelaide, South Australia, 24-26 September (Brewer, Ton, Taylor and Waters)
- 2nd International Conference on Accident Investigation, Research, Interpretation and the Law, Brisbane, 20-23 September (Daly)
- Freight Congress, Melbourne, 12 September (Taylor)
- 8th International Conference on Travel Behaviour Research, Austin, Texas, 21 - 25 September (Hensher as residing President of IATBR)
- 50km/h Local Area Residential Speed Zone, Melbourne, 7 October, (Taylor)
- Freight Forum - Bayside, Melbourne, 16 October (Taylor)
- EASTS '97, The 2nd Conference of Eastern Asia Society for Transportation Studies, Seoul, Korea, 29 - 31 October (Dia and Rose)
- Environment Protection Authority (EPA) Air Quality Management, Melbourne, 31 October (Taylor)
- Australian Automobile Association Public Policy Forum, Melbourne, 17 November (Taylor)
- Intelligent Transport Systems - back from Berlin, Melbourne, 20 November (Taylor)
- 19th Conference of Australian Institutes of Transport Research, Monash University, 24 - 26 November (Brewer, Daly, Hensher, Paterson, Rose, Taylor, Ton, Waters, Young)
- International Conference on Public Sector Efficiency, Faculty of Commerce and Economics, University of New South Wales, Sydney, 27-28 November (Waters)
- Road Safety Audit Seminar, Melbourne, 2-3 December (Daly)
- The Asia Pacific Transport Conference, Conference convened by the Pacific Economic Cooperation Committee, Seoul, South Korea, 5-6 December (Hooper)
- The AIC Conference on Urban Transport Strategy, Sydney, 10-11 December, (Brewer, Hensher and Young)

Guest Lectures

David Hensher gave guest lectures on Discrete Choice Theory in the Department of Marketing, The University of Sydney, March - April (8 hours).

David Hensher gave guest lectures on Project Formulation - transport planning considerations in public infrastructure projects at the Department of Civil Engineering, The University of Sydney, 20 August (2 hours).

Media

Ross Robinson's address on enterprise-based agreements and stevedoring productivity to the Waterfront Reform Conference was reported in *Lloyd's List Australian Weekly*, 24 March.

David Hensher's short document on Roads as our most important public transport asset was featured in *The Sydney Morning Herald*, 10 April.

Ross Robinson was mentioned in *Lloyd's List Australian Weekly*, 30 June.

Peter Daly was interviewed by *The Age*, 6 August on disruption to commuter activity patterns during public transport strikes.

David Hensher's short article on Trams - a return to the past or a genuine advancement? was featured in *The University of Sydney News*, Volume 29 No. 17, 7 August and in *The Sydney Morning Herald*, 18 August.

David Hensher was interviewed by Doug Drew of ABC 2BL on Thursday 14 August on Trams - a return to the past or a genuine advancement.

Peter Daly had letters to the editor published in *The Herald Sun*, 15 October and in *The Age*, 6 November.

INDUSTRY LINKAGES

9

Other activities by ITS which contribute to industry and community linkages include positions in conference organisations, international committees and editorial positions, as well as overseas visits and public lecture series.

Positions

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

Conference organisation

- Director and Executive Chair, 19th Conference of Australian Institutes of Transport, Monash University, 24-26 November 1997 (Daly)
- Director, Accident Investigation and Prevention Workshop, 14-16 July 1997 (Daly)
- Member, Steering Committee of the 21st Australasian Transportation Research Forum, Adelaide, September 1997 (Hensher and Hooper)
- Vice-Chair, International Scientific Committee of the World Conference on Transport Research (Hensher)
- Member, Executive Committee of the 8th International Conference on Travel Behaviour Research, Austin, Texas (Hensher)
- International Adviser, 5th International Conference on Competition and Ownership in Land Passenger Transport, Leeds (Hensher)
- Member, Organising Committee, National Tourism Research Conference on Tourism Research Building a Better Industry, Sydney, July 1997 (Hooper)
- Member, PECC Delegation to the 2nd APEC Transportation Ministerial Meeting, Victoria, B.C., Canada, 22-24 June, 1997 (Hooper)
- Member, Coordinating Committee of Air Transport Special Interest Group, World Conference on Transport Research Society, (Since 1995) (Hooper)
- Member, Programming Committee, ISATA 31, (Young)
- Chair, Organising Committee, Australian Conference on Engineering Management Education, (Young)

International positions

- Member, US Transportation Research Board Committee on Telecommunications and Travel Behaviour (Brewer)
- Member, World Conference on Transport Research Society (Chow, Everett, Hensher, Hooper, Robinson and Taylor)
- Member, International Association of Maritime Economists, International MultiModal Association (UNCTAD Geneva), (Everett and Robinson)
- 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)
- President, International Association for Travel Behaviour Research (Hensher)
- International Vice-Chairman, World Conference on Transport Research Scientific Committee (Hensher)
- Member, US Transportation Research Forum (Hensher, Hooper)
- Representative for Australia on the International Coordinating Group for the Asia Pacific Conference on Transport, Pacific Economic Cooperation Council (PECC) (Hooper)
- Member, PECC Delegation to the 2nd APEC Transportation Ministerial Meeting, (Victoria, B.C., Canada, 22-24 June, 1997) (Hooper)
- Member, National Research Council Transportation Research Board Urban Goods Movement Committee (Taylor)
- Member, US Transportation Research Board Committee on Citizen Participation in Transportation Planning (Underwood)

Australian positions

- Member, The University of Sydney Steering Group for Academic Entrepreneuring (Brewer)

- Member, The University of Sydney Budgetary Advisory Committee (BAC) (Brewer)
- Member, Institute of Transportation Engineers (ITE) Australia and New Zealand Section, Executive Board (Daly, Dia, Taylor and Young)
- Monash Student Chapter Coordinator, Institute of Transportation Engineers (ITE) (Daly)
- Member, Institute of Engineers Australia (Daly)
- Member, Chartered Institute of Transport (Everett, King, Robinson and Young)
- Member, Institute of Australian Geographers, (Everett, Robinson)
- Member, Institute of Public Administration (Australia) (Everett, Robinson)
- Member, Australian Institute of Political Science (Everett, Robinson)
- Member, Australian Bureau of Statistics Transport Statistics User Group (Hensher)
- Member, Transport Data Centre, Technical Advisory Committee, NSW Department of Transport (Hensher)
- Member, Transport Research Centre (RMIT University) Advisory Committee (Hensher)
- Member, University of Sydney Department of Marketing Advisory Committee (Hensher)
- Member, Australian Capital Territory Transport Reform Advisory Group (Hensher)
- Research Associate, Centre for Applied Economic Research and Analysis, James Cook University of North Queensland (Hooper)
- Member, Board of the NSW Section of the Chartered Institute of Transport, (Hooper)
- Member, Travel and Tourism Research Association (Hooper)
- Member, The University of Sydney Academic Forum (Hooper)
- Secretary, Council of Australian University Tourism and Hospitality Education (Hooper)
- Member, International Networking Group, Air Transport Special Interest Group, World Conference on Transport Research (Hooper)
- Member, Transport Branch Committee of Institution of Engineers Australia (Victorian Division) (Rose, Taylor)
- Chair, Institution of Engineers Australia National Committee on Transport (Rose)
- Member, Transport and Mobility Reference Group established by the City of Hobsons Bay in Melbourne. The reference group has been established to guide the development of the Transport and Mobility layer of the Hobsons Bay Strategy (Rose)
- Chair, Institution of Engineers, Australia, Transport Branch Committee (VIC) (Taylor)
- Member, Victorian Board Institution of Engineers, Australia (Taylor)
- Member, Faculty of Engineering Board (Taylor, Young)
- President, Australian and New Zealand Section of the Institute of Transportation Engineers (Young)
- Member, Standards Australia Parking Committee (Young)
- Chair, Monash University Advisory Committee on People with Disabilities (Young)
- Member, Monash University Buildings Committee (Young)
- Member, Monash University Education Committee (Young)
- Fellow, Institution of Engineers Australia (Young)
- Fellow, Institution of Transportation Engineers (Young)
- Fellows of the Chartered Institute of Transport (Hensher, Hooper, Young)

Editorial positions

Garland Chow is on the Editorial Advisory Board of the *International Journal of Physical Distribution and Logistics Management*.

David is Associate Editor of *Asia Pacific Journal of Transport*, Area Editor of *Transport Reviews*; and is on the editorial boards of *Transport Policy*; *Transportation*; *Transportation Research*; *International Journal of Transport Economics*; *Logistics and Transportation Review*, *Transportation Research Part E* (from 1997); *Journal of Transport Economics and Policy; Transportation Planning and Technology*; and *Journal of Retail and Consumer Services*.

David Hensher is also on the Editorial Board of the *Journal of Transport and Statistics* a new journal which appeared in 1997 from the US Department of Transportation and the Bureau of Transportation Statistics.

Paul Hooper is Associate Editor of *Logistics and Transportation Review* (as of 1997, known as *Transportation Research E*)

Ross Robinson is Regional Editor of *Journal of Maritime Policy and Management*.

Bill Young is Associate Editor of *Transportation*.

Geoff Rose is Editor-in-charge of *Transport Engineering in Australia*.

Andrew Kerr is Regional Editor of *International Journal of Physical Distribution and Logistics Management*.

Reviews of papers

Staff reviewed papers for a wide range of transport journals and conferences.

Peter Daly refereed papers for *the EASTS '97, The 2nd Conference of Eastern Asia Society for Transportation Studies*.

Hussien Dia refereed papers for *Neural Nets in Transport (book), Transportation, 15th Australasian Conference on the Mechanics of Structures and Materials, the Proceedings of the Fourth Meeting of the EURO Working Group on Transportation* and *National Committee on Transport - IEAust Professional Prize Paper Competition.*

David Hensher refereed papers for *Transportation Research, Journal of Transportation Economics and Policy, Transport Reviews, Agenda, Journal of Transportation and Statistics, Economic Journal, and Transportation*.

Paul Hooper refereed papers for *Asia Pacific Transport Journal, Pacific Tourism Review, Transportation Journal, the 21st Australasian Transport Research Forum* and *National Conference on Tourism Research*.

Geoff Rose referred papers for *the Proceedings of the Fourth Meeting of the EURO Working Group on Transportation* and *the 21st Australasian Transport Research Forum*.

Samantha Taylor refereed papers for the *US Transportation Research Board Annual Meeting.*

Tu Ton refereed papers for *Transportation Research* and *Transport Reviews*.

Bill Young refereed papers for *Easts Conference, ATRF Conference and Transportation.*

Seminar Series and Policy Workshops

ITS Seminar Series (ITS Sydney)

A weekly Public Seminar Series from 20 August to 5 November were organised by ITS Sydney. The series featured the following speakers:

- The Future of Logistics in Australia, 20 August, Doug Robinson (National Sales & Marketing Manager, LEPP International)
- Establishing a Fare Elasticity Regime for Urban Passenger Transport: Non-Concession Commuters, 27 August, Professor David Hensher
- Work Design: the Real Barrier to Work Scheduling and Travel Behaviour, 17 September, Assoc. Professor Ann Brewer
- Developing and Sharing Road Centerline Databases: Technical and Institutional Issues, 8 October, Kenneth J. Dueker (Director Centre for Urban Studies, Portland State University)
- The Economic Regulation of Aviation in Australia: Where is the Market Leading the Policy Makers?, 22 October, Assoc. Professor Paul Hooper
- Developing Logistics in a Corporate Environment, 5 November, Dr Pieter Nagel (Pieter Nagel Logistics International)

Transport Policy Series (ITS Monash)

A weekly Public Seminar Series from 18 September to 16 October were organised by ITS Monash. The series featured the following speakers:

18 September: Transport and Environment

- Contemporary transport development and the future shape of Melbourne, Professor Michael Buxton (Professor of Environmental Policy, RMIT University)
- Transport and Greenhouse, Dr Leo Dobes (Bureau of Transport and Communications Economics)

25 September:

- Hon. Geoff Craige (Minister for Roads and Ports)

2 October: Running Public Transport as a Business

- Darwin/Melbourne railway and associated gas pipe line, Everald Crompton (Chairman, Australian transport and energy corridor)
- Achievements of Westcoast in running a privatised passenger railway, Don Gibson (Westcoast Rail)

9 October: The Place of Trams in Public Transport

- Cholesterol in the Arteries of Traffic?, John Cox (Transport Consultant)
- The Experience of Returning Trams to Sydney, John Joyce (Acting General Manager, TNT Transit)

16 October: Government's Role

- The Future Role of Government in Transport, Lindsay Tanner, MP (Federal Shadow Minister for Transport)

Maintaining industry and international contacts

In May, Paul Hooper visited Mauritius to complete a report on the economic benefits to Mauritius resulting from a new regional airline, African Island Airways. During the visit, the findings were presented to a meeting of advisers to the Prime Minister, to a press conference and to a meeting of 100 leading business people in Mauritius.

In June, Paul Hooper visited Massey University, Albany Campus to participate in the launch of the Diploma in Transport Planning, a program offered by Massey University's Department of Resource and Environmental Planning in cooperation with the Institute of Transport Studies.

From 26 September to 1 October, David Hensher visited the Institute of Transportation Studies at the University of California, Irvine and Berkeley campuses. He met with Professor Tom Golob, Assistant Professor Amelia Regan and PhD students (Irvine and Berkeley) on Freight Strategy.

As President of the International Association of Travel Behaviour Research, David chaired the 8th IATBR Annual Board meeting and gave the President's Address.

Visitors

Dr Allan Hawke, Secretary, Executive of Department of Transport and Regional Development, Canberra visited ITS Sydney on 4 March to discuss cooperation between the Department of Transport and ITS in areas of mutual research interest and teaching program interest, especially the CTM.

Professor Wayne Talley, Frederick W. Beazley Professor of Economics at the Old Dominion University, Norfolk, Virginia, visited ITS Sydney in June. During his visit Professor Talley presented seminars to graduate and PhD students and discussed in detail his recent research on port performance. He is also participating in a major new publication on ports and maritime development with members of ITS Sydney staff. Professor Talley is a distinguished economist with special interest in transportation and more recently in maritime transportation. He has published widely in the leading economic and transport journals and is an authority on transport carrier costing, pricing and performance in the transit industry.

Falko Bode visited ITS Sydney from Germany to work as Visiting Research Assistant from May to October. He worked with David Hensher on Transport and the Olympics.

Dr Gadi Kfir, Deputy director of the Israel Institute of Transportation Planning and Research (International) Limited, visited ITS Monash from March to end of August. Dr Kfir's interest are transportation planning and multi-modal investment analysis.

Professor Kenneth J. Deuker, Director of Center for Urban Studies, Portland University, visited ITS Sydney as ITS Visiting Professor from September to October. While at ITS he and Tu Ton conducted a short course on GIS in Transportation. This has developed in an ongoing project to develop a comprehensive framework for GIS-T. He also presented his research on GIS-T data models and collaborated with David Hensher and Jordan Louviere on the design of a Stated Choice experiment on the tradeoff of parking price and walking distance to parking.

Professor Pichai Taneerananon, Director of the Centre for Traffic and Transport Management in Southern Regional Cities, Prince of Songkla University, Thailand and *Leang Khoburat* from Department of Electrical and Computer Systems Engineering, Prince of Songkla University, Thailand, visited ITS Monash for 4 weeks in September to undertake research in Road Safety and Traffic Engineering.

Professor William G. Waters II, University of British Columbia, visited ITS Sydney as ITS Visiting Professor from September to December to undertake research and teach in the Transport Policy Workshop and in a half-day course for the Certificate of Logistics Management on "Bulk systems analysis: illustrations from export coal logistics". He also attended and gave a number of presentations at conferences and seminars; including a paper entitled "Why total factor productivity is an incomplete measure of performance for government enterprises" at the 21st Australasian Transport Research Forum in Adelaide in September, and the distinguished visitor address "The link between total factor productivity, pricing and financial performance: Results for Canadian railways and major world airlines" at the Department of Economics, University of Sydney in November.

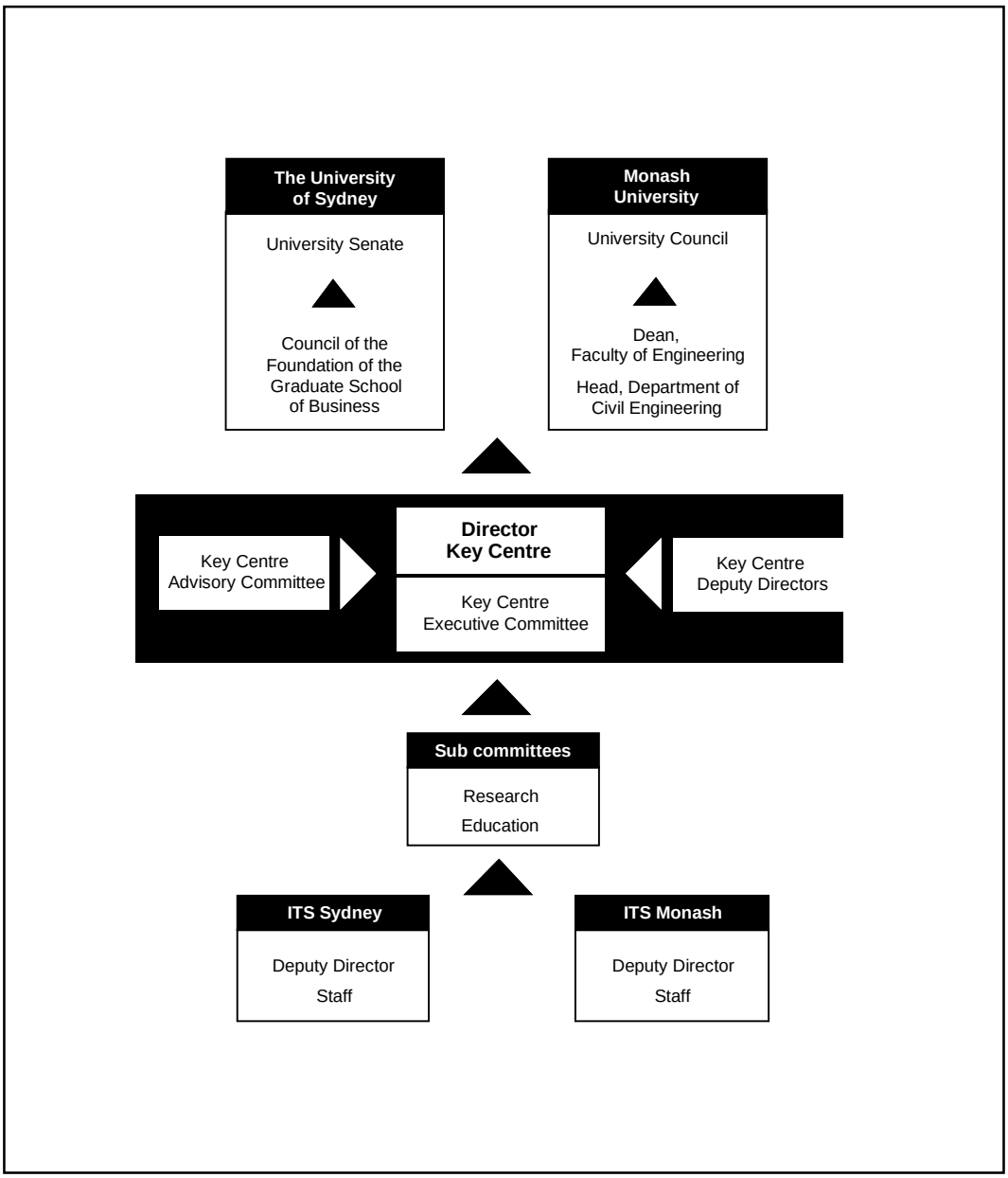
Kjartan Salersminde, Research economist, Institute of Transport Economics, Oslo, Norway, visited ITS Sydney for 6 months from October to undertake research in the area of valuation of environmental benefits of transport projects.

Professor Pete Fielding from University of California Berkeley visited ITS Monash as part of an Overseas Student Program.

10 MANAGEMENT STRUCTURE

The management structure of the Key Centre is shown in the diagram below.

The role of the Advisory Committee is to provide advice on any matters referred to it by the Key Centre Executive, as well as to initiate matters for consideration that are of interest to the Key Centre, such as the teaching and research program and opportunities for participation of industry and government. The Advisory Committee met in 1997 in Sydney. With the review of the Committee's role currently being undertaken (see Director's report), the next meeting has been deferred until February 1998.



Advisory committee members

Chair: Professor John Taplin
Department of Information Management, University of Western Australia

Mr Neil Aplin
Secretary, Tasmanian Department of Transport

Professor Kay Axhausen
Institut fur Strabenau and Verkehrsplanung, Leopold-Franzens-Universitat

Dr Peter Barnard
General Manager, Policy, Planning & Public Affairs, Australian Meat & Livestock Corporation

Professor Michael Beesley
Professor of Economics, London Business School

Mr David Berry
Deputy Secretary, Strategic Planning and Economic Services

Mr Jim Bosnjak
President, Bus and Coach Association (NSW) / Westbus

Professor Michael Brisk
Dean, Faculty of Engineering, University of Monash

Mr Piers Brogan
Business Sector Manager, Transport, RUST PPK Pty Ltd

Dr Hugh Brown
Manager, N.D. Lea International Ltd

Mr Bob Cain
Manager, Tourism Futures

Professor Garland Chow
Faculty of Commerce and Business, University of British Columbia (Collex Professor of Logistics and Freight Transport Management at ITS from July 1996 to July 1997)

Mr Murray Cullinan
Assistant Secretary, Planning, Department of Infrastructure (VIC)

Mr Doug Dean
Managing Director, Collex Waste Management Pty Ltd

Mr Terry Dene
Director - Commercial, NSW Road Transport Association

Mr David Ashley
Sinclair Knight Merz

Mr Paul Forward
Director, Road Network Information, Roads and Traffic Authority

Mr Barry Garnham
Consultant

Professor Philip Goodwin
Professor of Transport Policy, ESRC Transport Studies, University College London

Mr Roger Graham
Director, Roger Graham & Associates Pty Ltd

Professor Paul Grundy
Head, Department of Civil Engineering, Monash University

Professor Yoshi Hayashi
Department of Geotechnical and Environmental Engineering, Nagoya University

Professor Soon-Kil Hong
Director, Institute for Aviation Industry & Policy Studies, Hankuk Aviation University

Mr Stephen Hunter
Director, Bureau of Transport and Communications Economics (until December)

Dr Ian Johnston
Executive Director, ARRB Transport Research Ltd

Professor Adib Kanafani
Director, Institute of Transportation Studies, University of California Berkeley

Mr David Kilsby
Associate, Sinclair Knight Merz

Mr Doug Kneebone
Recently retired Chairman, PPK Pty Ltd

Professor Jordan Louviere
Professor of Marketing, Department of Marketing, The University of Sydney

Mr Kevin Norris
Executive Director, Bus Association Victoria

Professor Ken Ogden
Group Manager, Public Policy, RACV

Professor Juan de Dios Ortuzar
Professor of Transport Engineering, Pontificia Universidad Catolica de Chile

Professor Tae Oum
Faculty of Commerce, University of British Columbia

Dr John Paterson
Secretary, Department of Infrastructure (VIC)

Dr Neil Primrose
Assistant Secretary – Trade Coordination, Department of Transport and Regional Development, Canberra (until December)

Professor Wilfred Recker
Director, Institute of Transportation Studies, University of California, Irvine

Professor Stephen Salsbury
Dean, Department of Economic History, Faculty of Economics, The University of Sydney

Mr John Sanderson
Assistant General Manager, Public Policy, RACV

Mr Karmjit Singh
Chairman, The Chartered Institute of Transport (Singapore)

Mr David Singleton
Managing Director, Ove Arup & Partners

Mr Neil Smith
Consultant

Mr Robert Smith
Consultant

Professor Daniel Sperling
Director, Institute of Transport Studies, University of California Davis

Ms Judi Stack
Chief Executive Officer, Rail Access Corporation

Mr John Stanley
Deputy Commissioner, National Road Transport Commission

Mr Jim Stevenson
Consultant

Dr Alastair Stone
Managing Director, Pacific Infrastructure Corporation

Professor John Taplin
Department of Information Management and Marketing, University of Western Australia

Professor Mike Taylor
Director, Transport Systems Centre, University of South Australia

Mr Don Telford
Executive General Manager, Logistics, TNT Australia (until December)

Professor Marty Wachs
Professor of Urban and Regional Planning and Civil and Environmental Engineering, University of California, Los Angeles

Mr John Walker
Chief Executive, Chief Ministers Office, ACT

From ITS Sydney

Professor David Hensher
Associate Professor Paul Hooper
Associate Professor Ann Brewer
Associate Professor Ross Robinson
Dr Sophia Everett
Dr Tu Ton

From ITS Monash

Professor Bill Young
Dr Geoff Rose
Ms Samantha Taylor
Dr Hussein Dia
Mr Peter Daly

FINANCIAL STATEMENT

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DEETYA, which provides funds for the Key Centres Program, requires a financial statement of income and expenditure using specified categories, as set out below.

Income

	1997		1998	
	Sydney	Monash	Sydney	Monash
ARC Centre grants	$340,000	$75,273	$336,000	$78,322
Other ARC programs	$10,000	$ -	$8,000	$ -
Other C'wealth Govt grants	$470,725	$ -	$525,000	$ -
State Govt grants	$ -	$ -	$ -	$ -
Local Govt grants	$ -	$ -	$ -	$ -
Industry/Private funds	$ -	$ -	$ -	$ -
Contracts/Consulting	$226,967	$325,610	$229,946	$50,000
Education Programs	$349,293	$37,500	$370,500	$310,000
Host institution support	$50,000	$ -	$25,000	$37,500
Other income sources/interest	$118,306	$286,604	$92,902	$260,000
Carried forward from previous	$624,186	$22,590	$703,649	$60,500
Total income	**$2,189,477**	**$747,577**	**$2,290,997**	**$796,322**

Expenditure

	1997		1998	
	Sydney	Monash	Sydney	Monash
Salaries	$(959,877)	$(384,104)	$(834,723)	$(620,000)
Equipment	$(84,420)	$(15,000)	$(12,500)	$(15,000)
Accommodation	$(7,057)	$(11,000)	$(5,000)	$(11,000)
Travel	$(47,290)	$(16,363)	$(19,500)	$(17,000)
Consumables	$(27,911)	$(10,000)	$(14,500)	$(10,000)
Other expenditure	$(359,273)	$(250,610)	$(342,217)	$(55,000)
Total expenditure	**$(1,485,828)**	**$(687,077)**	**$(1,228,440)**	**$(728,000)**
Carried forward	$703,649	$60,500	$1,062,557	$68,322

12 A STRATEGIC STATEMENT 1998-2002

Mission

Through specialisation and networking to achieve excellence in research and teaching.

Our Vision

To be regarded by industry and government throughout Australia and the Asia Pacific region as the first place they should contact for expertise on state-of-the-art management practices in transport.

Our Objectives

Objective Number	Objective	Identifier
1.1	Develop linkages with other national institutions and other groups within the University of Sydney and Monash University with common teaching and research interests	Networking
1.2	Encourage and maintain linkages with international institutions with common teaching and research interests	International links
1.3	Encourage and maintain linkages with government agencies in Australia with common interests	Government links
2	To identify a number of specialised areas that define our expertise	Specialisation
2.1	To develop & apply new behavioural frameworks, statistical tools and data paradigms	Travel Behaviour Research
2.2	To encapsulate the strategic/policy implications of research under objectives 2.1, 2.3 - 2.6	Transport Strategy & Policy
2.3	To develop frameworks for studying the performance and management of transport organisations	Transport Performance
2.4	To develop GIS/GPS capability within an ITS and travel behaviour framework	Transport Technology
2.5	To develop the expertise in transport/traffic engineering	Transport Engineering
2.6.1	To deliver the premier graduate transport management program in Australasia	Transport Education - Graduate
2.6.2	To develop a distance graduate transport management program	Transport Education - Graduate Distance
2.6.3	Continuing development of certificate programs	Transport Education - Certificate
2.6.4	To deliver a PhD program linked to the research specialisations (as per Objective 2)	Transport Education - Doctoral
2.7	To facilitate the development of academic careers in transport	Junior Faculty Program
2.8	To contribute to the availability of high quality conferences and seminars in Australia in areas of specialisation	Conference Activity

Our Corporate Values

Independence	Excellence	Teamwork	Attitude
Continuous Improvement	Commitment	Entrepreneurship	Relevance

Actions to achieve the objectives: 1998-2002

Objective	Action	Target	Coordination	Maximum Resources
1.1	Strategic alliances with other Departments & Centres e.g. Department of Marketing/University of Sydney, Centre for Information Systems/Monash University and Transport Research Centre/RMIT		DH/WY/JL/ST	
1.1.1	To deliver jointly with Department of Marketing short courses in GIS, Survey Methods and Data Combination Methods		DH/Terry Beed	
1.1.2	To deliver jointly with Centre for Information Systems courses in Logistics Systems.		ST	
1.1.3	A program of visiting academics/ researchers (including PhD researchers) to ITS	up to 2 p.a	DH	
1.1.4	To (jointly) supervise Honours students in Department of Marketing (Sydney) on a transport topic within ITS's specialisation	up to 2 p.a	DH/PH	
1.2.1	A program of ITS staff visiting other international institutions (linked to OSP and conferences/ missions)			
1.2.1	A program of international visitors to ITS	up to 6 p.a	DH/WY	$20,000
1.3	A program of visiting government employees (including PhD researchers)	up to 1 p.a	DH	
2	Identified areas of specialisation as per identifiers for objectives 2.1 - 2.6			
2.1.1	Transport/Land use/Environment study redevelopment for Sydney	98-01	DH/TT	
2.1.2	Telecommunications-travel interactions	ARC (99-01)	AB/DH	

Objective	Action	Target	Coordination	Maximum Resources
2.1.3	Travel activity analysis	ARC (99-01)	DH/AB/PD	
2.1.4	Travel surveys/ABS/data base management	98-	TT/SL	
2.1.5	Freight behaviour modelling	98-	DH/ST	
2.2.1	Impacts of transport on environment	98-	new	
2.2.2	Institutional & political barriers in transport	98-	AB	
2.2.3	Aviation and Tourism	98-	PH	
2.3.1	Bus and coach benchmarking study (include marketing)	98-	JK/DH	
2.3.2	Transport management text	98-99	AB	
2.3.3	Rail productivity data base update	98-01	DH	
2.3.4	Monitoring developments in privatisation, deregulation, competitive tendering, competition policy	98-	DH/PH	
2.3.5	Bus and coach business book update - internationalisation	98-99	AB/JK	
2.4.1	GIS-T capability for GGE and teaching	98-01	TT/GR	
2.4.2	GPS and ITS integration	98-01	TT/GR	
2.5	Coordination of ITS nodes (research and teaching)	98-	TT	
2.6.1.1	Integration with MCom (Sydney)	98-99	DH/PH	
2.6.1.2	Partnering with Massey University (NZ)	TPW 98	AB/PH	
2.6.1.3	Development of scholarships - RAC, DOT, BCA	98-99	AB	
2.6.1.4	Alumni activities (include ITS dinner and Leaders talk)	98-	AB/WY	
2.6.2.1	Distance development of specified courses and higher degrees	TPW 98	AB/WY/GR/ST	

Objective	Action	Target	Coordination	Maximum Resources
2.6.3.1	CTM/CCM/CSBM - Western Australia	98-	AB/JK	
2.6.3.2	CTM/CCM - NSW including review	98-99	AB	
2.6.3.3	CTM/CFM/CSCM - national review and Distance	98-99	AB/DW	
2.6.3.4	CTM/CCM - distance Qld/SA/NT/ Tas/ACT	98-01	AB/JK/Mon	
2.6.3.5	CTM/CCM/CLM - New Zealand	98-01	AB	
2.6.3.6	CLM for Taiwan - Mandarin	98	AB	
2.6.3.7	CTM for Victoria	98-01	ST	
2.6.3.8	Education Program in parking		WY	
2.6.4.1	Maintaining PhD policy	98-	AB/GR	
2.6.4.2	Preparatory program (coursework, seminars on methods etc)	98-	AB	
2.6.4.3	Generate PhD students in specialisations only	98-	SL/AB	
2.6.4.4	Review of PhD program	98-	AB/GR	
2.7.1	Junior Faculty Facilitation	98-01	DH	
2.8	ATRF '98 and IATBR 2000 (Cairns)	98-01	AB/DH	

Strategic Focus

	ITS Sydney	ITS Monash	Department of Marketing/Uni of
Travel Behaviour	√	√	√
Transport Strategy & Policy	√	√	x
Performance of Transport Organisations	√	X	X
Transport Technology	√	√	GIS only
Traffic & Transport Engineering	√	√	X
Transport Education Delivery Methods	√	√	√