

## THE CONTRIBUTION OF A DEDICATED PROFESSOR AND RESEARCHER – YORDPHOL TANABORIBOON IN THAILAND

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**Abstract:** This paper presents the contributions and activities of late Professor Yordphol Tanaboriboon during his life span towards his professional life and academic arena. His professional career propelled him towards a leading academia and innovative researcher in not only in Thailand but also in Asian region. The mission he cherished in his academic life is radiantly reflected through his accomplished projects, well researched publications, numerous academic lectures and presentations in the national and international level. His dedication in road safety research made him a pioneer in Thai society as well as in internationally recognized figure with the Prince Michael International Road Safety Award 2006.

**Key Words:** *innovative researcher, pioneer, well researched*

### 1. INTRODUCTION

Professor Yordphol Tanaboriboon was regarded the dynamic and active person in his professional life and research activities. His motivation made very promising in his research studies where there are ample reflections of innovative studies and futuristic visions. He passed away in June of 2006 when he was serving as Professor and Field Coordinator of Transportation Engineering Program, under School of Engineering and Technology, Asian Institute of Technology (AIT), Thailand. He was also the director of Asian Center for Transportation Studies (ACTS) and Thailand Accident Research Center (TARC); both located at AIT.

### 2. LIFE SPAN: EDUCATIONAL AND SERVICE LIFE

Yordphol Tanaboriboon received his bachelor and masters degree from Oklahoma State University in the USA in 1973 and 1975 respectively. He was awarded doctoral degree in 1979 from Virginia Polytechnic Institute and State University in the USA.

After being awarded the PhD degree from the USA in 1979, he started his professional career in capacity building and research studies in various aspects of transportation engineering. He bestowed his knowledge in different parts of the world by serving as a teacher in different reputed alma maters. From 1979 to 1982 he worked as an Assistant Professor in King's Mongkut's Institute of Technology in Thailand. Later, he served as a senior lecturer at National University of Singapore from 1982 to 1986. Again, he joined to King Mongkut's Institute of Technology and worked as Associate Professor from 1986 to 1987. Then for the first time he joined Asian Institute of Technology as Associate Professor and served from 1987 to 1994. Then he went to another overseas university – Tohoku University in Japan and

worked there as Associate Professor from 1994 to 1995. Again he joined AIT and served as Associate Professor from 1995 to 2000. Afterwards, he became Professor and continued his professional career till 2006.

During his long professional career, Professor Yordphol contributed in different sectors of transportation engineering both as a leading mentor and researcher. He realized the growing need of public attention in road safety as early as in 1981 for Thailand as well in this region. He first expressed his ever growing concern about the road safety situation in Thailand in the proceedings of the First Conference on the Study of Traffic Accidents in Thailand, Chulalongkorn University, Bangkok in November, 1981 with the paper titled 'Accident Study on the Expressway'. Since then, road safety was regarded as one of the major concern but neglected issues associated with public health, national economy, law enforcement and not to mention, transportation engineering. However, only a few researchers all over the world were concerned about this massive problem for the developing part of the world. With the passage of time, people forget those serious accidents brought under media coverage, but the problems remain there. Understanding the gravity of the prevailing condition of the unattended problem, Professor Yordphol brought it to the public attention through extensive research studies. Pioneered in this area of expertise in Thailand, he contributed to the Thai society through his dedications in his professional career of exhaustive research activities, projects and trainings in national and international arena.

During his service time he maintained some responsible affiliations with many promising organizations. This can be mentioned as follows:

- Vice-President of the Eastern Asia Society for Transportation Studies (EASTS)
- Member of the Committee on Non-motorized and Related Issues in Developing Countries, Transportation Research Board, National Research Council.
- Representative of the Transportation Research Board (TRB) to the Asian Institute of Technology (AIT)
- Member of the American Society of Civil Engineers (ASCE)
- Expert on Road Safety for United Nations (UN)
- Road Safety Advisor for ADB on the ADB-ASEAN regional Safety Program
- Senior Road Safety Auditor, Registered in Australia; audited 10 roads/intersections in Thailand and 11 roads in Singapore
- Co-founder and Vice-President of Thailand Global Road Safety Partnership (TGRSP)
- Member of the Engineering Institute of Thailand
- Professional Engineer (Thailand)
- Referee for research projects
- Vice-Chairman of Intertraffic 2002 Asia
- President of the Thai Society for Transportation Studies
- Expert member of Road Safety Operation Center

### **3. THE CONTRIBUTION TO COMMUNITY**

The contribution of late Professor Yordphol Tanaboriboon can be presented under different categories of his of research works that brought pragmatic implications in Thai society as well as in Asian region.

#### **3.1. Contribution in Road Safety**

##### **3.1.1. Innovative Research Vision**

There are some particular areas of interest to apply the concept of innovative traffic engineering in this region of developing country. The major research and professional works conducted in this area include GIS application in road safety, accident investigation and reconstruction, data mining in road safety, driving simulator for measuring driving performance, application of medical science in road safety, and work zone safety management, traffic flow and application of computer in transportation engineering.

#### 3.1.1.1 Research publications under master theses

The following research publication includes the master theses under Professor Yordphol's supervision:

- Application of Data Mining and GIS for Accident Analysis on Bangkok Expressways
- A Study on the Impact of Fatigue Driving in Thailand
- Development of Accident Database Management System for Highway Police
- Analysis of Motorcycle Accidents in Thailand
- Application of Data Mining in Road Safety
- Identification of Factors in Road Crashes Through Accident Investigation and Reconstruction in Thailand
- Development of the GIS-Based Traffic Accident Information System Through an Integrated Police and Medical Data: Khon Kaen, Thailand Case Study
- Development of Road Accident Management System on GIS Through the Trauma Management System: A Case Study in Khon Kaen, Thailand
- Identifying Factors Inducing Severe Injury with Motorcycles Through the Developed GIS-Based Accident Data Management System
- GIS-Based Safety Guidelines for Highways in Thailand: A Case Study of Highway Number1, Saraburi Province (STA121+200 To 123+400)
- Safe Route to School Analysis Through GIS: A Case Study of Khon Kaen, Thailand
- Identification of Black Spot Locations Through GIS: A Case Study in Cantho, Vietnam
- Determination of Ambulance Vehicles Routes Through GIS: A Case Study in Khon Kaen, Thailand
- Identification of Hazardous Locations Along the Expressway in Bangkok Through Application of a Geographic Information System
- An Analysis of Weather Conditions and Traffic Accidents Through GIS Application
- An Investigation of Pedestrian Facilities on GIS in Bangkok
- Development of the Computerized Work Zone Management System a Decision Support Tool for Work Zone Planning and Safety Design in Thailand
- Analysis of Traffic Accidents from the Trauma Registry: Khon Kaen, Thailand Case Study
- Traffic accident study in Bangkok

Other research publications

- Kowtanapanich, W., and Tanaboriboon, Y. (2002) Development of Emergency Medical Service Support System Through GIS: A Case Study of Khon Kaen, Thailand, **Proceedings of the International Symposium on Lowland Technology**, Japan, pp. 511-516, September 2002.
- Ruengson, D., Tanaboriboon, Y., Chadbunchachai, W., and Teekayuphun, P. (2002) GIS Application on Road Accident Management System as a Part of Trauma Management System for Community Health Promotion: A Case Study of Khon Kaen, Thailand, **81<sup>st</sup> Transportation Research Board Annual Meeting** (in CD-Rom), January 2002, Washington D.C.
- Ruengson, D., and Tanaboriboon, Y. (2001) Development of GIS Based Accident

Database System for Hospital, Invited Paper (in Thai) presented at the 2<sup>nd</sup> **National Conference on Traffic Accidents**, Khon Kaen, March 2001.

#### 3.1.1.2 Research project

- Engaged in a project on GIS Application on Road Accident Management System for Community Health Promotion as a principal investigator sponsored by the Royal Thai Government in 2002-2003.

#### 3.1.1.3 Trainings/Seminars

- Organized the training course on “Regional Traffic Safety Network”, sponsored by the Asian Development Bank, 11-13 December 2003.
- Organized a Training Course on “Urban Road Safety”, 15-17 February 2000, AIT, in collaboration with CUC UEM Training and Technology Transfer Program.

### **3.1.2. Achievement through Implementation**

The achievement came along with implementation of the real projects. The benefits are achieved in the society through road safety audit and its training and practice of traffic management. The beneficial effects and evaluation from the project and trainings/workshops are worth mentioning.

#### 3.1.2.1. Research publications under master theses

- Development of Road Safety Audit Decision Support System
- Development of a Computerized Support System For Road Safety Audit Risk

#### 3.1.2.2. Research projects

- Engaged as a Team Leader to audit the Chalong Rat Expressway and Burapha Nithi Expressway, sponsored by the Expressway and Rapid Transit Authority of Thailand, 2005-2006.
- Engaged as a Team Leader to audit the Chalerm Maha Nakhon Expressway, sponsored by the Expressway and Rapid Transit Authority of Thailand, 2003-2004.
- Engaged in a project on Road Safety Audit System: A Research Study, as a co-principal investigator sponsored by the Ministry of Transport and Communications in 2002-2003.
- Audited 10 roads/intersections in Thailand and 11 roads in Singapore in 2002-2003.
- Engaged in a project on “Covering of Klong Prapa Project” as a co-principal investigator sponsored by the Department of Highways in 2001-2003.

#### 3.1.2.3. Trainings/Workshops

- Organized the training course on “Regional Traffic Safety Network”, sponsored by the Asian Development Bank, 11-13 December 2003.
- Co-organized a Training Course and Workshop on Road Safety Audit, 27-28 August 2002, Samui, in collaboration with the Ministry of Transport and Prince of Songkla University.
- Co-organized a Training Course and Workshop on Road Safety Audit, 15-16 July 2002, Lumpang, in collaboration with the Ministry of Transport, Prince of Songkla University and Chiang Mai University.
- Co-organized a Training Course and Workshop on Road Safety Audit, 19-20 June 2002, Bangkok, in collaboration with the Ministry of Transport and Prince of Songkla University.
- Organized a Training Course on “Road Safety Audit”, 14-15 June 2001, Bangkok, in

collaboration with the Thai Society for Transportation Studies and Ministry of Transport and Communications.

- Organized a Training Course on “Road Safety Audit”, 9-10 November 2000, Bangkok, in collaboration with the Thai Society for Transportation Studies and Ministry of Transport and Communications.
- Organized a Training Course on “Road Safety Audit”, 26-27 October 2000, Khon Kaen, in collaboration with the Thai Society for Transportation Studies, Department of Highways and Khon Kaen University.
- Organized a Training Course on “Road Safety Audit”, 7-8 September 2000, Chiang Mai, in collaboration with the Thai Society for Transportation Studies, Department of Highways and Chiang Mai University.
- Organized a Training Course on “Road Safety Audit”, 31 July-1 August 2000, Songkla, in collaboration with the Thai Society for Transportation Studies, Ministry of Transport and Communications and Prince of Songkla University.

#### 3.1.2.4. Manual development

- Thailand Road Safety Audit Manual (in English and in Thai), January 2003, ACTS, Asian Institute of Technology, Prince of Songkla University, in collaboration with the Ministry of Transport, Thailand.

### **3.1.3. Commitment to the Stakeholders**

The commitment for safer roads and road users came from the outcomes of the establishment of Thailand Accident Research Center (TARC) and consultancy to Asian Development Bank (ADB) as an in-country team leader. The initiatives taken have a long term effects in the society through the commitments made by the project (TARC).

#### 3.1.3.1. Research objectives

Thailand Accident Research Center (TARC)

- To acquire know-how about the mechanisms of accidents and incidence of personal injuries to develop suitable solutions and to achieve better road safety
- To build up the network of road accident researchers and analysts for Thailand
- To develop a scientific approach for road accident data collection leading to objective analysis to achieve ore effective road safety measures
- To conduct in-depth study on road accidents emphasizing on accident reconstruction research
- To develop a reliable database on road accident which can be applicable to other related activities e.g. the development of more effective and up-to-date counter measures for road accidents

#### 3.1.3.2. Capacity building

- Providing an advanced level of education to government officials through TARC as a multi-disciplinary area comprising Highway Engineer, Highways Police, Road Safety Planner, and Public Health Personnel.
- Four master students sponsored by Thai Health Promotion Foundation and two doctoral students by scholarship are undertaken under the capacity building scheme of TARC.

#### 3.1.3.3. Trainings

- 1st training for Department of Highway on Accident Investigation organized by TARC, March 8, 2006, in collaboration with the Ministry of Transport, Thailand.
- 2<sup>nd</sup> training for multi-disciplinary people on Accident Investigation and

- Reconstruction organized by TARC, October 18, 2006, Khon Kaen, Thailand.
- 3<sup>rd</sup> training for multi-disciplinary people on Accident Investigation organized by TARC, January 9, 2007, Chiang mai, Thailand.
- 4<sup>th</sup> training for multi-disciplinary people on Accident Investigation and Reconstruction organized by TARC, April 19, 2007, Suratthani, Thailand.

### 3.1.4. Well Researched Studies

The segment of society addressed through sustainable and realistic mission to disseminate the messages is well researched and timely appropriate in context of Thai environment. The target group of the society who has direct responsibility in road safety points to the highway police and medical personals. The research works conducted by them are completely appropriate and serving as a role-model not only in Thai society but also in other developing countries in this region. The intentions are invariably well focused and benefit forthcoming. The software packages especially designed for hospital trauma and accident cost calculation are timely outcomes for the environment and section of the society to be addressed. However, the research works were also focused on travel characteristics, traffic flow, signalization, public transit management, pedestrian facilities and pavement engineering as well as environmental and water transportation aspect.

#### 3.1.4.1. Research publications under master theses

- A Study on Seat Belt Usage and Its Impact in Thailand
- Motorcycle Accident Analysis in Hanoi
- The Development of a Conflict Study Package
- A Traffic Accident Study Along the Friendship Highway Section in Khon Kaen, Thailand
- Study of Traffic Accidents in Provinces of Thailand
- Accident Risk Modeling of Four-Legged Signalized Intersections
- Identification of Hazardous Locations on Bangkok Expressways
- Analysis of Traffic Accidents from the Trauma Registry: Khon Kaen, Thailand Case Study
- The Safety Effectiveness of Widening a Two-lane Rural Highway: Case Study of Madras, India
- Modeling Traffic Accidents: Case Study of Sun Yat-Sen National Freeway, Taiwan
- Traffic accident study in Bangkok

#### 3.1.4.2. Other research publications

- Boontob, N., Tanaboriboon, Y., Kanitpong, K., and Suriyawongpaisal, P. (2007) Impact of Seatbelt Use to road Accidents in Thailand, **86<sup>th</sup> Transportation Research Board Annual Meeting** (in CD-Rom), January 2007, Washington D.C., paper no.07-1582.
- Islam, M.B., Tanaboriboon, Y., Kanitpong, K., and Suriyawongpaisal, P. (2007) Application of Event Analysis in In-depth Study of Road Accidents, **86<sup>th</sup> Transportation Research Board Annual Meeting** (in CD-Rom), January 2007, Washington, D.C. paper no. 07-1557.
- Islam, M. B., and Tanaboriboon, Y. (2005) Crash Investigation and Reconstruction... The New Experience in Developing Countries: Thailand Case Study, **Proceedings of the 13<sup>th</sup> International Conference Road Safety on Four Continents** (in CD-ROM), pp. 874-884, Warsaw, Poland, October 2005.
- Tanaboriboon, Y. (2004) Thailand Accident Research Center: Its Role in Thai Society,

Invited Key-Note Paper presented at the **International Student Seminar on Transport Research 2004** (ISSOT2004), Hanoi, Vietnam, November 2004.

- Kowtanapanich, W., Tanaboriboon, Y. and Chadbunchachai, W. (2004) An Alternative Approach to Road Safety Problem in Developing Countries: A Public Participation Approach to Identify Black Spots Location—A Case Study in Thailand, **83<sup>rd</sup> Transportation Research Board Annual Meeting** (in CD-Rom), January 2004, Washington D.C.
- Tanaboriboon, Y. (2002) Road Safety Audit: A New Alternative Approach to Solve Road Accident Problems in Developing Countries... The Thai Experiences, Invited Paper Presented at the Urban Traffic Safety in Vietnam, Hanoi, November 2002.
- Tanaboriboon, Y. (2002) Road Safety Audit: Another Approach for Solving Traffic Accidents in Thailand, Invited Paper Presented at The **8<sup>th</sup> National Convention on Civil Engineering**, in Thai, Khon Kaen, October 2002.
- Tanaboriboon, Y., Taneerananon, P., Jiwattanakulpaisarn, P., Kowtanapanich, W., and Waugh, P. (2002) Road Safety Audit in Thailand: Present and Future, **Proceedings of International Conference on Intertraffic 2002 Asia**, Bangkok, pp. 257-274, June 2002.
- Tanaboriboon, Y. (1993) Traffic Safety in the Developing Countries: Problems and Issues in Thailand....Bangkok Experience, **Proceedings of the International Conference on Asian Road Safety Conference (CARS '93)**, pp. 25-41, Malaysia, October 1993.
- Tanaboriboon, Y. (1981) Accident Study on The Expressway, **1<sup>st</sup> Conference on the Study of Traffic Accidents in Thailand**, Chulalongkorn University, Bangkok, November, 1981.

#### 3.1.4.3. Research projects

- Development of GIS Based Traffic Accident Database Through Trauma Management System: A Case Study of Khon Kaen, Thailand in 2003 in collaboration with Khon Kaen Hospital, Japan International Cooperation Agency and Ministry of Public Health, Thailand.
- Engaged in a project on “Traffic Accident Study ... Thailand and Japan Experiences” in 1996/1997 as a principal investigator which was sponsored by the Sumitomo Foundation.

#### 3.1.4.4. On-going research study

- Development of Road Safety Management System in Thailand
- Decision Support System for Safety Design of Highway Furniture on Rural Highways in Thailand

### 3.1.5. Replicability in Real Life

The benefits obtained from the research works on road safety audits and training and traffic management for better quality of life is self-evident. However, the assessment of the eligibility of the contributions through development of software packages from research activities in the social context is highly reflected and evaluated. In addition, the research publications considering the timely need on road safety and transportation engineering management are also important.

#### 3.1.5.1. Research projects

March 2005, Expressway and Rapid Transit Authority of Thailand also requested Asian

Center Transportation Studies (ACTS), AIT to conduct road safety audit on:

- Chalong Rat Expressway (Ramindra-At Narong Expressway)
- Buraphawithi Expressway (Bang Na-Chonburi Expressway)

April 2004, Expressway and Rapid Transit Authority of Thailand requested Asian Center Transportation Studies (ACTS), AIT to conduct road safety audit on Chalerm Mahanakorn Expressway (1st Stage Expressway System)

June 2003, Thai Shell Exploration and Production requested Asian Center Transportation Studies (ACTS), AIT to conduct RSA projects on 2 sections:

- Bang Phra Crude Oil Depot to Junction with Highway 1063
- Lan Krabu Production Station to Junction with Highway 1065

### 3.1.5.2. Research publications

- Kowtanapanich, W., and Tanaboriboon, Y. (2006) Applying Public Participation Approach to Black Spot Identification Process: A Case Study in Thailand, **Journal of the International Association of Traffic and Safety Sciences, IATSS Research, Vol. 30, No.1**, pp.73-85.
- Kowtanapanich, W., Tanaboriboon, Y., and Chadbunchachai, (2005) An Integration of Hand-held Computers, GPS Devices, and GIS to Improve the Efficiency of EMS Data System, **Journal of the Eastern Asia Society for Transportation Studies, Vol.6**, pp.3551-3561.
- Paisalwattana, S. and Tanaboriboon, Y. (2005) Decision Support System for Work Zone Safety Management: A Case Study in Thailand, **Journal of the Eastern Asia Society for Transportation Studies, Vol.6**, pp.3341-3356.
- Luatthep, P., and Tanaboriboon, Y. (2005) Determination of Economic Losses due to Road Crashes in Thailand, **Journal of the Eastern Asia Society for Transportation Studies, Vol.6**, pp.3413-3425.
- Ponboon, S. and Tanaboriboon, Y. (2005) Development of Road Accident Reporting Computerized System in Thailand, **Journal of the Eastern Asia Society for Transportation Studies, Vol.6**, pp.3453-3466.
- Tanaboriboon, Y. and Satiennam, T. (2005) Road Accidents in Thailand, **Journal of the International Association of Traffic and Safety Sciences, IATSS Research, Vol. 29, No.1**, pp.88-100.
- Tanaboriboon, Y. (2004) Road Accidents in Thailand: Changes Over the Past Decade, **Journal of the International Association of Traffic and Safety Sciences, IATSS Research, Vol. 28, No.1**, pp.119-122.
- Iamtrakul, P. and Tanaboriboon, Y. (2003) Analysis of Motorcycle Accidents in Developing Countries: A Case Study of Khon Kaen, Thailand, **Journal of the Eastern Asia Society for Transportation Studies, Vol.5**, pp.147-162.
- Satiennam, T. and Tanaboriboon, Y. (2003) A Study on Pedestrian Accidents and Investigation of Pedestrian's Unsafe Conditions in Khon Kaen Municipality, Thailand, **Journal of the Eastern Asia Society for Transportation Studies, Vol.5**, pp.95-110.
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- Tanaboriboon, Y. (1994) Road Accidents in Thailand, **Journal of the International Association of Traffic and Safety Sciences, IATSS Research, Vol. 18, No. 1**, pp. 86-88.

#### 3.1.5.3. Real life software packages

- Development of Computerized System in Assessing Probability of Survival From Seat Belt Usage
- Road Crash Cost Computerized Package
- The Accident Reporting and Accident Investigation Computerized System
- Accident Data Base Management
- Motorcycle Accident Database Management in Khon Kaen
- Road Safety Audit Decision Support System
- Road Accident Management System in Khon Kaen
- Risk Assessment Approach for Road Safety Audit
- Computerized Lighting System Development (High-Light DEP)
- Conflict study Package

#### 3.1.6. Sustainability of Research Outcomes

The research projects completed in the past on road safety were financed by the government and other national and international funding agencies. Considering the work-plan of the projects, the financial strength of the project to carry out the objectives is quite adequate. All the projects indicated the sustainability in terms of finance and implementation in achieving the goals. In addition, the research publications also indicated the sustainability of the study focusing on public transit–bus, para transit, and water transportation.

#### Thailand Accident Research Center

The establishment of TARC is to conduct in-Depth Study in Road safety. The task involves the at-scene investigation of the traffic accidents and database development for statistical analysis. Moreover, it focuses on the accident reconstruction to describe the events in sequences and the factors involved in these events. It aims to address to the road safety issues to promote the awareness of safety in the societies.

Funding agencies: Department of Highways (Thailand), Volvo Car Corporation (Sweden)

#### Auditing the Chalerm Maha Nakhon Expressway

This project, financed by the Expressway and Rapid Transit Authority of Thailand (ETA), is aimed to prevent the occurrences of accidents or reduce the severity of accidents taking place along the Chalerm Maha Nakhon Expressways by applying the concept of road safety audit which is a proactive tool for solving road accident problems.

Funding agency: Expressway and Rapid Transit Authority of Thailand

### 3.2 Contribution in Transport Planning and Traffic Engineering

Professor Yordphol's research vision was also focused on transport planning and traffic engineering.

#### 3.2.1 Innovative Thinking in Research Methodology

##### 3.2.1.1. Research publications

- Charnkol, T., and Tanaboriboon, Y. (2006) Tsunami Evacuation behavior Analysis: the Beginning of Transportation Disaster Response, **Journal of the International Association of Traffic and Safety Sciences, IATSS Research, Vol.30, No.2**, pp. 83-96.
- Charnkol, T., and Tanaboriboon, Y. (2006) Evacuee Behaviors and Factors Affecting the Tsunami Trip Generation Model: A Case Study in Phang-nga, Thailand, **Journal of Advanced Transportation, Vol.40, No.3**, pp. 313-330.
- Anh, T. T., Tanaboriboon, Y. and Hung, B. Q. (2005) Analysis of Bus Service in Hanoi, Vietnam, **Proceedings of the 6<sup>th</sup> International Conference of Eastern Asia Society for Transportation Studies**, pp.352-362, Bangkok, September 2005.
- Simaskul, C., and Tanaboriboon, Y. (2004) An Investigation of Pedestrian Facilities on GIS in Bangkok, **Proceedings of the International Symposium on Lowland Technology (ISLT 2004)**, Thailand, pp. 293-296, September 2004.
- Charnkol, T., and Y. Tanaboriboon, (2004) Spatial Analysis for Construction Planning on GIS: An Application in Locating a New Distance Center in Roi-et, Thailand, **Proceedings of the International Symposium on Lowland Technology (ISLT 2004)**, Thailand, pp. 287-292, September 2004.
- Tanaboriboon, Y. (2004) Transportation Progress in Thailand Over the Past Decade, Invited Paper presented at the **10<sup>th</sup> Anniversary Symposium of EASTS** in 2004 "EASTS's 10 years progress and the future direction", Tokyo, Japan, October 2004.
- Gurusinghe, G., Nakatsuji, T., Azuta, Y., Ranjitkar, P., and Tanaboriboon, Y. (2002) Multiple Car-Following Data with Real-Time Kinematic Global Positioning System, **Transportation Research Record, No.1802**, pp 166-180.
- Suchartrungruangsri, P., Tanaboriboon, Y., and Takahashi, K. (2001) Evaluation of Bus Operations Using Performance Indicator and GIS Analysis: Bangkok Case Study, **Proceedings of the 4<sup>th</sup> Conference of the Eastern Asia Society for Transportation Studies**, Hanoi, October 2001.
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- Suzuki, H., Nakatsuji, T., Tanaboriboon, Y., and Takahashi, K. (2000) An Application of a Neural-Kalman Filter for Dynamic Estimation of O-D Travel Time and Flow with the Different Number of Traffic Detectors, **Infrastructure Planning Review, JSCE, Vol.17**, pp. 947-956.
- Suzuki, H., Nakatsuji, T. and Tanaboriboon, Y. (2000) A Model Development for Estimations of Origin-Destination (O-D) Travel Time and Flow on Freeways, **Proceedings of the 6<sup>th</sup> International Conference on Applications of Advanced Technologies in Transportation Engineering**, published (in CD-ROM), Singapore, 2000.
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- Gurusinghe, G. S., Nakatsuji, T., and Tanaboriboon, Y. (1999) A Car Following Model Incorporating Excess Critical Speed (E.C.S) Concept, **Proceedings of the 5<sup>th</sup> National Conference on Transportation Engineering**, pp. TRP-1–TRP –6, March 1999, Thailand.
- Suzuki, H., Nakatsuji, T., and Tanaboriboon, Y. (1999) Simultaneous Estimation of Dynamic O-D Travel Time and Flow on Freeway Corridors, **Proceedings of the 5<sup>th</sup> National Conference on Transportation Engineering**, pp.TRP-7–TRP-19, March 1999, Thailand.
- Taweasilp, S., Nakatsuji, T., and Tanaboriboon, Y. (1999) Development of Delay Formula and Optimal Cycle Time Formulas for Isolated Pre-Signalized Intersections in Bangkok, Thailand, **Proceedings of the 5<sup>th</sup> National Conference on Transportation Engineering**, pp. TRP-34 – TRP-39, March 1999, Thailand.
- Suzuki, H., Nakatsuji, T., and Tanaboriboon, Y. (1998) Simultaneous Estimation of Dynamic O-D Travel Time and Flow Using A Neural-Kalman Filter With Macroscopic Traffic Model, **Proceedings of Infrastructure Planning, Vol.21, No.2**, pp. 325-328, November 1998, Japan.
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#### 3.2.1.2. Seminar/Trainings

- Organized a Seminar on "Traffic Simulation Techniques", 14 January 1999, AIT, in collaboration with Japan International Cooperation Agency (JICA).
- Organized an International Seminar on "Intelligent Transportation Systems: The 21<sup>st</sup> Century Asian Challenge", 26 November 1998, Bangkok, in cooperation with the Thai Society for Transportation and Traffic Studies (TSTS).
- Organized a Seminar on "Planning and Financing of Subway System in Asia: Bangkok Experience", 21 November 1996, Bangkok, in cooperation with Japan International Cooperation Agency (JICA).
- Organized two training courses on "Traffic Engineering and Its Computer Application" in 1992 as Course Director which were sponsored by the Office of the Commission for Management of Road Traffic, CIDA, Expressway and Rapid Transit Authority of Thailand and Petroleum Authority of Thailand.
- Engaged in a project on "Feasibility Study on the Utilization of Articulated and/or Double-Decker Buses in Bangkok" in 1992 as a principal investigator which was sponsored by the Bangkok Mass Transit Authority.

#### 3.2.1.3. Research projects

- Engaged in a project on “The Zonal Database Package for Bangkok Transportation Planning Unit” in 1990 as principal investigator which was sponsored by the Asian Engineering Consultants Corp., Ltd.
- Engaged in a project on “Role of Chao Phraya Express Boat as Public Transportation in the Bangkok Metropolitan Area” in 1989 as a principal investigator which was sponsored by the International Development Research Centre, Canada.
- Engaged in a project on “Relationship between Traffic and Ambient Air Quality in Bangkok” as a principal investigator sponsored by Asian Honda Motor Co., Ltd. in 2000-2001.
- Engaged in a project on “A 5-Year Estimation on the Required Number of Buses in Bangkok” in 1992 as a principal investigator which was sponsored by the Bangkok Mass Transit Authority.
- Engaged in a project on “A Comprehensive Water Transportation Study in the Bangkok Metropolitan Area” in 1991 as a principal investigator which was sponsored by the International Development Research Centre, Canada.
- Engaged in a project on “A Pre-Feasibility Study on the Pathum Thani New Port Project” in 1988 as a co-principal which was sponsored by Pathum Thani Province, Royal Thai Government.

#### 3.2.1.4. Training/Workshop

- Organized three training courses on “Traffic Engineering Training/Seminar for 16 Provinces” in 1993 as a Course Director which was sponsored by the Office of the Commission for Management of Road Traffic.
- Organized a Training Course on “Traffic and Air Quality Management”, 23 April 2001, Bangkok, for the Transport Department, Government of Karnataka, India.

#### 3.2.1.5 Research objectives

##### Asian Center for Transportation Studies (ACTS)

- To promote awareness of the role of transportation in the economic and social development within the Asia-Pacific Region
- To support and improve the existing transportation systems in the region by strategic planning and training, aimed to better equip transportation-related personnel with the necessary knowledge in the operation, management, and maintenance of transportation systems for urban and rural development
- To establish and maintain a network of transportation-related organizations within and outside AIT and encourage collaboration among them in relation to transportation researches, services and other related activities
- To further develop the Asian Center for Transportation Studies as a Center of excellence in the professional and technical services, independent, and unbiased transportation information while concentrating on aspects that are strategic and regional in nature

### **3.3. Contribution in Transportation Management**

Professor Yordphol has demonstrated many practical countermeasures through his keen analytical capabilities focusing on transportation demand management and related issues on travel management.

#### Research publications

- Charnkol, T., and Tanaboriboon, Y. (2006) Shelter Allocation Analysis for Tsunami Disaster: A Case Study in Phuket, Thailand, **Asian Profiles, Vol. 34, No.5**, pp. 439-454.
- Paisalwattana, S. and Tanaboriboon, Y. (2005) Study on the Impact of Short-Term Work Zone Along an Un-interrupted Flow Highway: A Case Study in Thailand, **Journal of the Eastern Asia Society for Transportation Studies, Vol.6**, pp.1100-1112.
- Limapornwanitch, K., and Tanaboriboon, Y. (2003) A Bottom-Up Approach to Implement Transportation Demand Management Measures in Developing Countries: Bangkok Experience, **Journal of the Eastern Asia Society for Transportation Studies, Vol.5**, pp.1829-1844.
- Hongsakorn, R., Sano, K., Takahashi, K., and Tanaboriboon, Y. (2003) Optimization Decision Model for Truck Terminal Policy, **Journal of the Eastern Asia Society for Transportation Studies, Vol.5**, pp.2148-2163.
- Espada, I., Nakatsuji, T., and Tanaboriboon, Y., (2002) A Discharge Capacity Formula for Priority T-Intersection and its Application to Macroscopic Simulation of Urban Networks, **Journal of Infrastructure Planning and Management, JSCE, No.IV-54**, pp. 177-186.
- Tanaboriboon, Y. (1992) An Overview and Future Directions of Transport Demand Management in Asian Metropolises, **Journal of The Regional Development Dialogue, Vol. 13 No. 3**, pp. 46-73, United Nations Centre for Regional Development, Nagoya, Japan, Autumn 1992.
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#### 4. CONCLUSIONS

Professor Yordphol's research publications and projects and professional career encompassed an important aspect of transportation engineering where his expertise and experience is reflected importantly in road safety, traffic engineering, public transportation and environmental aspect of transportation engineering. Maintaining a simultaneous interest in different branches of transportation, later he was involved more in road safety researches due to the timely demand and perspective of Thai society.

Professor Yordphol is a researcher vested with futuristic vision. He is well known for his thrive to utilize the tools of success of different disciplines in road safety. He introduced the use of GIS and decision support system to improve road safety in Thailand. Following that path, he applied data mining technology, which is a latest know-how used as a business decision making tool, in road safety to fathom the present road safety related problems in Thailand with higher specificity and pragmatic applicability. In recent times, funded by the Road Safety Foundation under the Department of Land Transport he was conducting research studies on the impact of drowsiness and fatigue of the drivers using driving simulator. This research is also a unique of its kind in Thailand. For his dedication towards road safety improvement in Thailand, he was awarded the Prince Michael International Road Safety Award 2006.

Very sadly, a tour on Road Safety Training organized by Volvo Cars Safety Centre at Gothenburg, Sweden where he went with a group of 16 students, staff, other official persons, he died by heart failure on Sunday 4 June, 2006. He is not present today, but his research works, his sincere dedication towards to his country and country fellow will remain ever shining. He frequently motioned words towards his research colleagues were:

***“Working for road safety does NOT mean working under the ‘limelight’, even not being paid attention by other people. DO NOT expect any reward from your service. Whatever you can do to save even ONE LIFE then just DO IT.”***