INTRODUCING THE ORGANIZATION OF TRAFFIC SAFETY

Thailand Accident Research Center (TARC)

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“Knowledge Saves Life” - a vision of the Thailand Accident Research Center (TARC)

ESTABLISHMENT OF TARC

The importance of TARC as a center of excellence dedicated to traffic safety research was the outcome of the study by Ministry of Transport and Communications (MOTC) of Thailand, with the World Bank assistance in 1995. Recognizing the urgent need for crash knowledge and research base for Thailand, its unique beginning was supported by a partnership between government and business sector. The key partners are the Department of Highways (DOH), Thailand, Volvo Car Corporation (Sweden) and the Thailand Global Road Safety Partnership (TGRSP). TARC was established in 2003 through its initial phase, and continued its ongoing research projects with financial support from DOH. Moreover, TARC research personnel were technically trained by the professors and researchers having expertise in crash in-depth studies from Chalmers University of Technology and Volvo Car Corporation, Sweden.

OBJECTIVES AND MISSION OF TARC

The mission of TARC is to increase the efficiency of road safety research through increased and better know-how and understanding the causes of road crashes in Thailand. Furthermore, it strives to find innovative and, yet, pragmatic solutions to minimize crashes and improve road safety in general, through high-standard research, application and dissemination of knowledge based on the work on a partnership basis. The specific objectives of TARC are as follows:
- To investigate, analyze, evaluate and acquire know-how on the mechanisms of crashes and the incidence of personal injuries on a continuous basis;
- To provide a scientific and objective approach to reduce the suffering and losses caused by road crashes with solutions adapted to the Thai context;
- To encourage partnerships to be built up, coordinate and implement crash research studies in order to establish a sustainable research program;
- To build up the capacity of the responsible agencies and persons concerned with road safety improvement in Thailand through education and training;
- To facilitate translating research into implementation through dissemination of research results by acting as a knowledge center.

TECHNICAL AND LOGISTIC RESOURCES OF TARC

TARC has its own research team carrying out at-scene investigations and conduct in-depth studies of particular crashes of interest with complete information required. TARC has its computerized investigation database that is routinely maintained by the collected information from at-scene crash investigations. However, the TARC investigation team is on routine surveillance of a crash information radio source with a well equipped investigation vehicle supported by Volvo Cars (Thailand) Limited, having important equipment such as - drawing instruments, distance measurement instruments, friction coefficient measurements, traffic cones and traffic signs, a camera and video camera, GPS, Laptop computer, and a First-Aid kit.

TARC ACTIVITIES

In practice, TARC conducts both short- and long-term research activities that overlaps with giving technical advice, conducting training courses, and undertaking special investigation studies, etc. The scope of TARC activities mainly focuses on several areas as follows:

Crash Investigation and Reconstruction

TARC team investigates crash cases by reaching a crash scene as soon as possible after a crash occurred. With the trained protocol, each member is assigned to collect all important information about a crash. This includes general information such as the crash scene, vehicles, and victims which are routinely maintained in the TARC crash database. All information collected for the analysis is used to describe the events of the crash, causes of any injuries, and finally the contributing factors of such crash. For the cases where the damage profile of vehicles can be measured, and evasive actions taken by the drivers in the form of skid marks or yaw marks can be found as physical evidence,
a complete crash reconstruction is performed by computer simulation to simulate the events before, during and after the crash. In the past three years, the scope of work for the accident investigation and reconstruction research has been conducted as follows:

1) **Study area**

During the first year, the study area covered a radius of approximately 60 km from TARC based location. Crashes were notified by real-time crash radio services from the concerned agencies, and considering the location of crashes within the study area, TARC investigation was carried out. The study area was extended to cover other major provinces in Thailand including Chiang Mai, Khon Kaen, and Surat Thani in the second year. Currently, the study area in suburbs of Bangkok is the focus.

2) **Times of investigation**

As accidents are unplanned events; data collection usually covers a 24 hour period which is done during three alternate 8-hour shifts each month.

**Helmet and Seatbelt Use Study**

Another research study conducted by TARC is related to the evaluation of risk behavior of drivers. During 2005-2008, the study of “Probability of fatality rate and injury severity level of helmet users in motorcycle and seatbelt users in 4-wheeler crashes” was conducted.

The methodology of this study included –

- The data collection on motorcycle helmet and seatbelt use was conducted, and the use rates were then estimated in the study area.
- All relevant motorcycle and 4-wheeler crash data were gathered from the major hospitals in the study area in accordance with the scientific crash investigation and accident reconstruction approach.

The team analyzed the probability of fatality and severity level of injury of helmet users in motorcycle accidents and seatbelt users involved in 4-wheeler crashes by applying statistical methods to determine the relationship between the fatality rate and level of injury severity in accident casualties and motorcycle helmet and seatbelt usages.

**Education of Graduate Students**

Thai Health Promotion Foundation provided full scholarships to two doctoral students and six masters students for postgraduate studies to support the operation of TARC (Full agreement can be found at the foundation office in Thailand.) There is one doctoral and one master scholarship directly provided by TARC and to support the staff of the Department of Highways.

**Training towards Local Capacity Building**

TARC conducts training and seminars for people in different disciplines such as Road Authorities, Public Health, Law Enforcement Agencies, Vehicle Manufacturers, Insurance Companies, Road Safety related NGOs, Educational Institutes, etc.
Information and Publications

The in-depth studies conducted by the TARC research team are periodically published in different competitive international conferences and journals in the road safety area and also local journals with different aspects of safety challenges recently identified by the TARC team in the Thai context such as:
- injury mechanism of occupants in road crashes;
- event analysis and mechanism of road crashes;
- bus accident investigation and motorcycle crash characteristics;
- impact of seatbelt usage in road crashes.

Public Awareness Building through Seminars

TARC arranged seminars to enhance public awareness building through crash investigation and reconstruction training and demonstrations by working with local media coverage. TARC brought up a widely media-attended public bus rollover case to the public through demonstrating the TARC investigation and reconstruction study.

Consultancy

TARC aims to produce a viable business plan for establishing TARC as a leading and sustainable national traffic safety research center. It aims at bringing the light of reality with the involvement of TARC in road safety consultancy.

TARC keeps updating TARC activities and other related information on road safety issues on its web site – www.tarc.or.th

INTERNATIONALLY RECOGNIZED AWARD

The founding manager, the late Professor Yordphol Tanaboriboon, was awarded the 2006 IRTE and Prince Michael Intentional Road Safety Award for his outstanding academic leadership and contribution through innovativeness in the road safety research arena in the south-east Asian region. This is obviously an internationally recognized milestone of inspiration to work for road safety in the Thai context not only for the TARC research team but also for supporting agencies in this region.

Seminars for TARC activities display to concerned agencies and media coverage