

ATRANS 2nd Annual Transport Symposium

The Fight for ROAD SAFETY : The Global, Regional, National, Local Challenge

27 Aug 2009

Imperial Queens Park Hotel

Bangkok

Pichai Taneerananon

Thai Society for Transportation and Traffic
Studies

Overview

- **Introduction**
- **The Problem**
- **The Cause**
- **The Goal**
- **The Action**



Globally, 1.3 Million People go to Heaven
Each Year, Thanks to Road Accidents

The Human Tragedy

- 1.3 million deaths pa.
- 19.18/100,000 pop.

- Source:
 - WHO, UN Moscow
 - Wiki, as of 15 August 2009, Earths population is estimated by the United States Census Bureau at 6.778 billion

The Risk

The World

- H1N1 deaths 1029 since outbreak
- Road deaths 1.3 million every year

Thailand pop. 65,905,410

- H1N1 Deaths ~ 110
 - risk of deaths 0.167/100,000
- Road Deaths ~ 13,000
 - 19.7/100,000

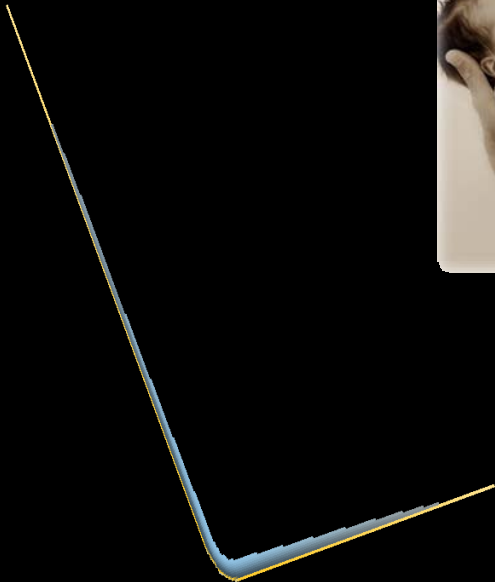
The Wish of Soichiro Honda

- that "Science and technology must serve to ensure peoples' happiness"

Road Accident



SAMSARA





Doctors are doing their best to save lives



Transport Engineers and planners can play equally important role to save lives

What is Rare in this world ?





Human life is a rarity



Cost of Fatality in Road Accident

Country	Cost of fatal casualty in a road accident (Euro Thousand)	Country	Cost of fatal casualty in a road accident (Euro Thousand)
Estimate with the "Willingness to pay" Method		Estimate with the "Human capital" Method	
U.S.A	2,600 (130 Million Baht)	Germany	930 (46.5 Million Baht)
Sweden	1,235 (61.75 Million Baht)	Belgium	400 (20 Million Baht)
New Zealand	1,150 (57.5 Million Baht)	France	350 (17.5 Million Baht)
United Kingdom	1,100 (55 Million Baht)	Netherlands	130 (6.5 Million Baht)
		Portugal	20 (1 Million Baht)
		Thailand	57-95.2 (2.85-4.76 Million Baht)*

*(2.85 Million Baht,ADB:2004),(3.05 Million Baht,Paramet:2005),(3.15 Million Baht,Worawate:2005), (4.76 Million Baht,Direk:1994)

Source: European Union Road Federation 2003

มูลค่าความสูญเสียเฉลี่ยจำแนกตามระดับความรุนแรง ของผู้ประสบเหตุทั่วประเทศ ณ. ปี พ.ศ. 2550

ระดับความรุนแรงของผู้ประสบเหตุ	มูลค่าความสูญเสียเฉลี่ย (บาท)
เสียชีวิต	5,315,556
พิการ	6,167,061
บาดเจ็บสาหัส	147,023
บาดเจ็บเล็กน้อย	34,761
ทรัพย์สินเสียหายอย่างเดียว	45,898

Crash and injury is preventable



The 2552 years oldest System Approach



- The Lord Buddha's Four Noble Truths

The four noble truths

1. Dukkha: suffering.
2. Samudaya: cause of suffering, rooted in ignorance.
3. Nirodha: an end of suffering, Nirvana.
4. Marga: a path that leads out of suffering, the Noble Eightfold Path.

The road crash system environment

- The Problem : Road crashes/Injuries
- The Cause : What are the causes of crashes/injuries
- The Goal : Road safety: Free from crashes/Injuries
- The Marga : The Right Acts

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Magnitude of the problem

2004

Total number of road crashes 1,549,369

- 14,245 **Deaths**
- 217,039 **Seriously injured**
- 775,245 **Slightly injured**
- 920,394 **PDO**

Source: Department of Highways 2007

Cost of Road Accidents

Total cost to the nation (in 2008)

243,000 million Baht

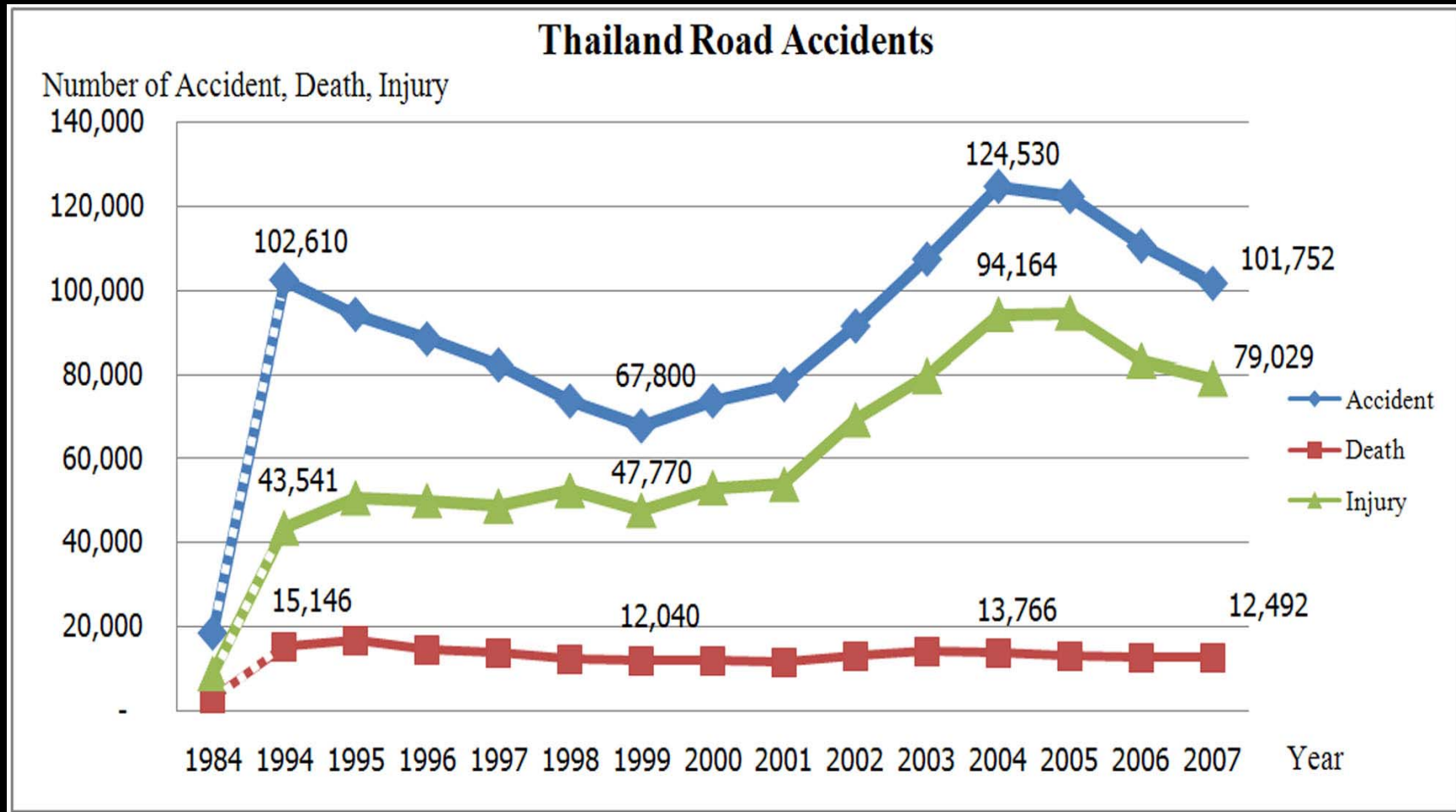
2.77 % GDP



Why people are killed or injured on the road ?



Trend in No of Crashes, Deaths and Injuries



15 Years on

1994 -2008

187,412 road deaths

ผู้เสียชีวิต จังหวัดชายแดนภาคใต้

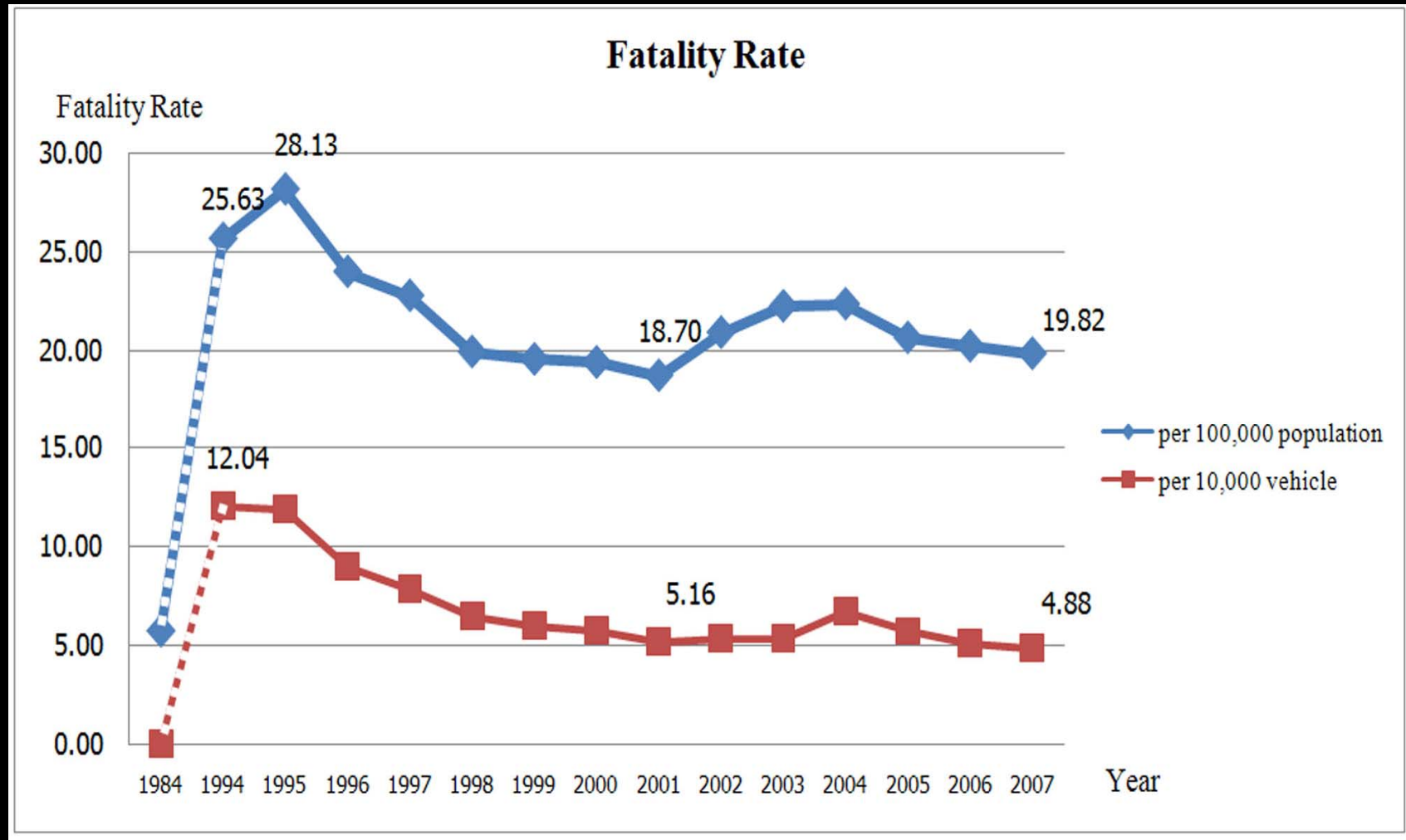
- 3500 + ใน 5 ปี
- การฆ่า ฆาตกรรม

ผู้เสียชีวิตบนถนนไทย

13000/365 = 36 ทุกวัน !

การฆ่าอย่างถูกกฎหมาย !

Trend in Fatality rates

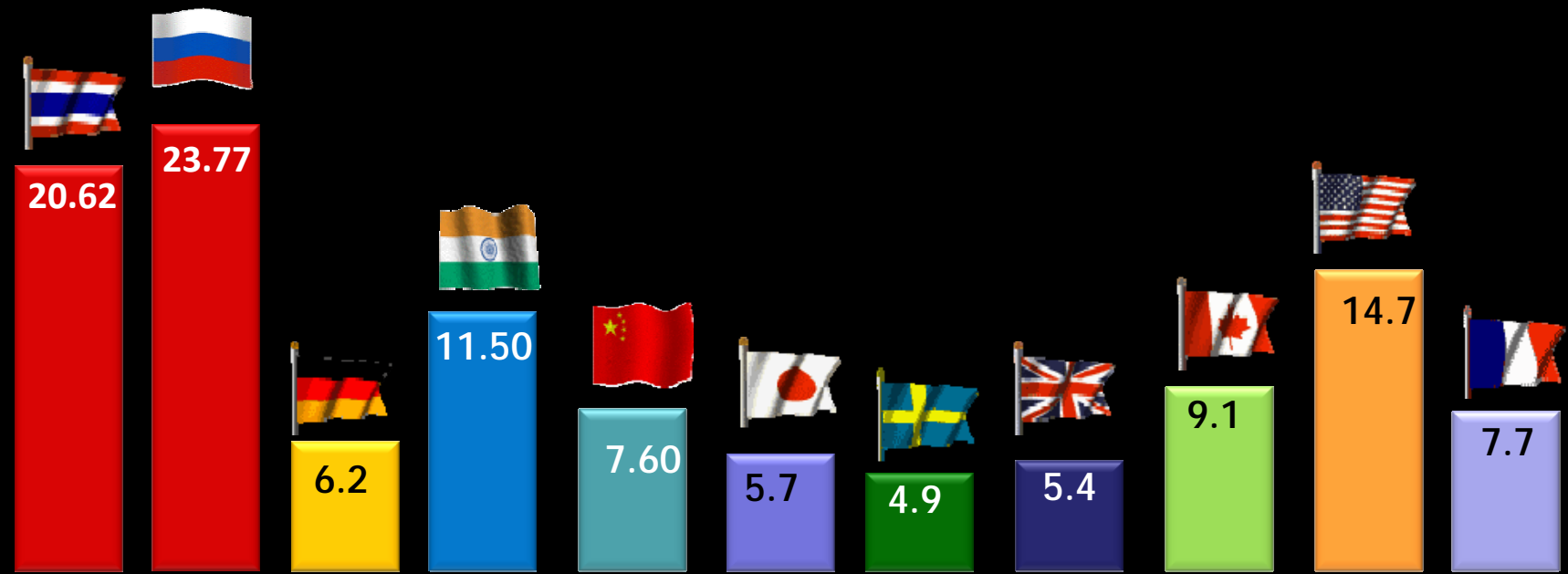


Benchmarking

Deaths/100,000pop

Road Traffic Fatality Rate 2005

Fatalities per 100,000 population



'Fresh Air ' Bus





Motorcycle Deaths Thailand

- o 12,492 died from road crashes in 2007
- o ~ 70 % or 8,744 from MC related

Source: Police, Ministry of Public Health etc.





Narenthorn EMS Center

Ministry of Public Health, Thailand

Every year **1,000,000** people involved with the road accident
250,000 of these are students

13,000 people die and...

2,000 fatalities are under 15 years old



Injury Surveillance (IS)

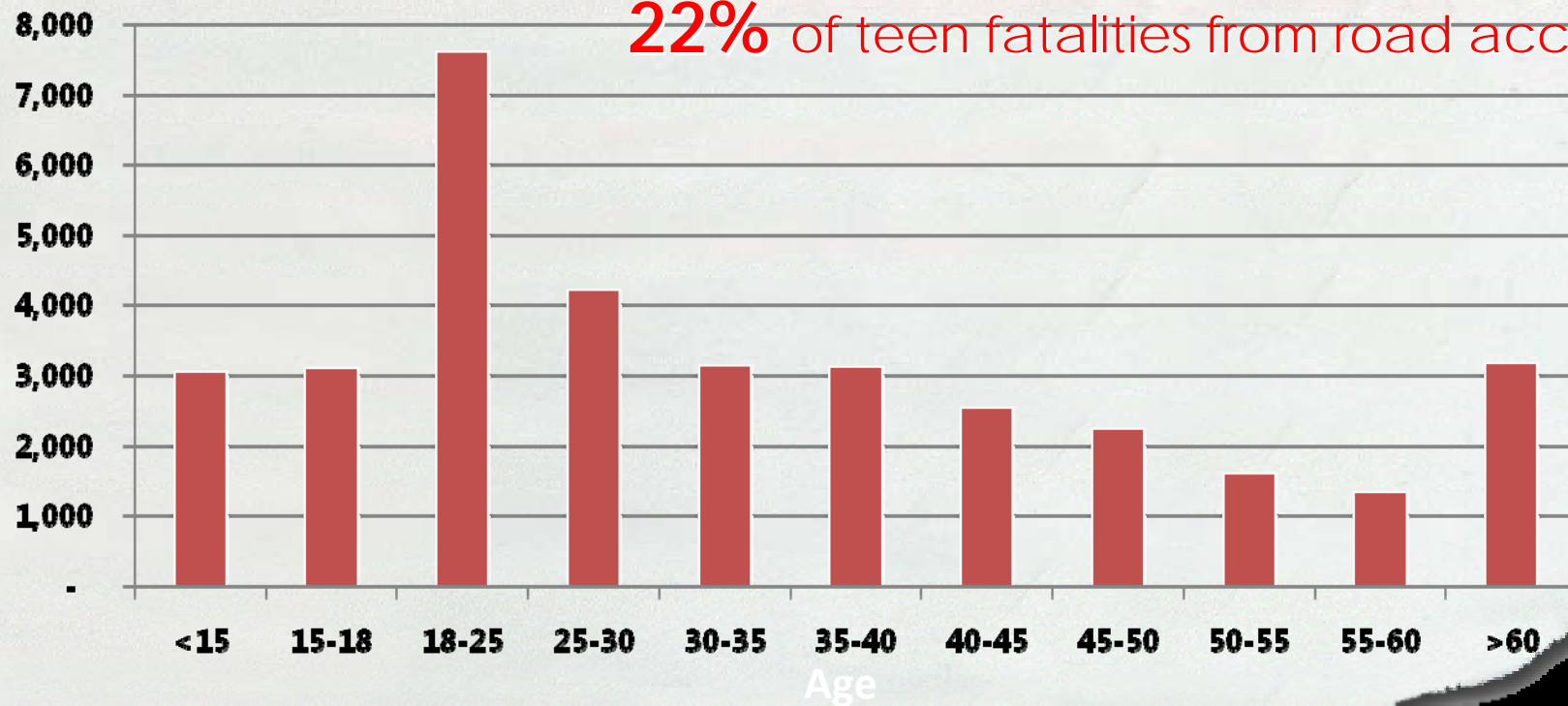
Data during year 1999~2005

457,612 people involved road accident and ...

35,226 people died from road accident

22% of teen fatalities from road accident

Fatality



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CRASH

Result of at least one of the 3 elements

- **H : Human errors 95 %**
- **I : Infrastructure Defects 57%**
- **V : Vehicle Defects 30%**

Driver's Error can cause quite serious consequence





27 17:18

Thai MC Research Findings

- **Rider error** was the most frequent primary contributing factor in the majority of both single and multiple vehicle accidents
- Alcohol involved accidents preceded 30% of all accidents reported here.
- ~ 40% of the accidents involved improper traffic strategy such as **unsafe speed, unsafe position, or following another vehicle too closely.**
- ~ half of the accident-involved riders were **unlicensed and none had any formal training in motorcycle riding techniques** and collision avoidance strategies
- Most were **self-taught or learned from friends and family.** This lack of training, licensing and knowledge frequently appeared as rider errors in many accidents.

Source : Motorcycle Accident Causation and Identification of countermeasures in Thailand Vira Kasantikul, MD 2001

A small error can be fatal



WMD ? Or Efficient Transport



Weapon of Mass Destruction



Efficient transport, Hanoi



Source: VN Students at AIT

The Inevitable, Vietnam



Real Deaths Vietnam

- 12,857 died from road crashes in 2007
- ~ 60 % or 7,714 from MC related

Source: National Traffic Safety Committee, VN

One Killed and one Seriously injured



Real Deaths Thailand

- 12,492 died from road crashes in 2007
- ~ 70 % or 8,744 from MC related

Source: Police, Ministry of Public Health

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The Goal

Thailand Road Safety Master Plan 2009-2013

- Save some 3,500 People's Lives
- Bring down fatality rate to 14.15 deaths/100,000 by 2013

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The Global Road Safety Action Plan

Decade of Action for Road Safety

2010- 2020

The Commission's 10 recommendations to the
Moscow Ministerial and UN
General Assembly November 2009

Governments should commit to attain the Decade goal by implementing a five pillar Action Plan

- Build management capacity,
- Influence road design and network management,
- Influence vehicle safety design,
- Influence road user behaviour
- Improve post crash care

Action for people responsible for saving lives

The Noble Eightfold Path:

1. Right Understanding
2. Right Thought
3. Right Speech
4. Right Action
5. Right Livelihood
6. Right Effort
7. Right Mindfulness and
8. Right Concentration

The Road Safety ACTs

Necessary, to get *Everyone* involved

- Swedish Road Traffic Safety Bill 1997
(based on Vision Zero)
- UK Road Safety Act 2006
- Japan Road Safety White Paper, annually
- Victoria Road Safety Act
- Thailand Road Safety Act , we need it !

Example

Road Safety Act 1986 - SECT 191D

- **Driver's duty to avoid driver fatigue** 191D.
- (1) A person must not drive a fatigue regulated heavy vehicle on a road while the person is impaired by fatigue.
- **Penalty**: the penalty for a severe risk offence.
- (2) A person charged with an offence under subsection (1) does not have the benefit of the mistake of fact defence.

Example

Road Safety Act 1986 - SECT 191F

- **Duties on employers, prime contractors and operators** 191F.
- (1) The employer, prime contractor and operator must take all reasonable steps to ensure that the employers, prime contractors or operators business practices will not cause or permit the driver to-
 - (a) drive while impaired by fatigue; or
 - (b) drive while in breach of the drivers work/rest hours option;
 - (c) drive in breach of another law to avoid driving while impaired by fatigue or while in breach of the drivers work/rest hours option.

Penalty: the penalty for a severe risk offence.

Example

- **Road Safety Act 1986 - SECT 191G**
- **Duties on schedulers** 191G.
- (1) This section applies to the scheduler of- (a) a fatigue regulated heavy vehicle; or (b) a driver.
- (2) The scheduler must take all reasonable steps to ensure that a driver's schedule for driving the vehicle will not cause or permit the driver to-
 - (a) drive while impaired by fatigue; or
 - (b) drive while in breach of the driver's work/rest hours option; or
 - (c) drive in breach of another law to avoid driving while impaired by fatigue or while in breach of the driver's work/rest hours option.
- **Penalty**: the penalty for a severe risk offence.

Conclusions

- Some 13,000 die needlessly on Thai roads
 - About 75 % or ~10,000 are m/clists and paxs
 - The cost to the nation ~ 243,000 MB/y
 - The Act needed to start a decade of action
 - Thailand Road Safety Act
- For the individual action
- Right Mindfulness
 - Right Concentration

