

# **IMPLEMENTATION OF LAWS CONCERNING THE COMPULSORY USE OF CHILD CAR SEATS ON PERSONAL MOTOR VEHICLES AND SAFETY STANDARDS FOR CHILD CAR SEATS AND ISOFIX SYSTEMS\***

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## **ABSTRACT**

Road traffic injuries and fatalities are critical public health problems in Thailand. WHO estimates that road traffic fatalities in Thailand amount to 24,237 deaths each year, or according to the estimated rate by WHO, 36.2 deaths per 100,000 population. Every year, approximately 100 – 140 children, under the age of fourteen years, perish in motor vehicles as a result of traffic accidents. Unfortunately, there is currently no specific safety measures prescribed under Thai Traffic Laws whose purpose is preventing the injury and death of children in a personal motor vehicle.

In Thailand, Traffic Law does not require a child to be restrained with a child car seat but it requires all passengers in a motor vehicle to wear safety belts. This Traffic Law requiring a child in a motor vehicle to wear a safety belt is impractical and unenforceable. This means the use of a child car seat is a voluntary safety measure which depends on the parents' discretion. Furthermore, there is no national product standard for child car seats. Therefore, most of the low-price child car seats distributed in Thailand are manufactured and imported without passing any standard certification. In some cases, a standard child car seat cannot be used and installed in certain models of motor vehicle. Thus, it is necessary to amend the related Motor Vehicle Law to mandate that all newly manufactured motor vehicles must be equipped with a new automotive part in order to support the use of a standard child car seat both for manufacture in country and for importation.

This article mainly focuses on the Car Seat Law and car seat safety standards in developed countries where the fatality rates in traffic accidents are low, particularly the European Union, the United Kingdom and the United States of America.

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According to research, the proposed appropriate solution to overcome child injury and fatality in a motor vehicle is compulsory measures through legal implementation and enforcement. The Road Traffic Act should be amended and the compulsory use of child car seats in a motor vehicle should be mandated by law. At the same time, the industrial product standard for child car seats should be set at a compulsory standard which conforms with UN Regulation No.44 or the equivalent a national standard. Moreover, the ISOFIX anchorage and ISOFIX top tether should be a compulsory automotive part that is required by law to be installed on all passenger motor vehicles.

**Keywords:** Car Seat Law, Child Car Seat, Child Restraint System, ISOFIX Car Seat, ISOFIX Anchorage Systems, Motor Vehicle and Automotive Product Safety Standards

## บทคัดย่อ

การบาดเจ็บและเสียชีวิตจากอุบัติเหตุบนท้องถนนในประเทศไทยถือเป็นปัญหาสำคัญด้านสาธารณสุขที่ควรได้รับการแก้ไขอย่างเร่งด่วน จากประมาณการ โดยองค์การอนามัยโลกการเสียชีวิตในประเทศไทยจากสาเหตุการเกิดอุบัติเหตุบนท้องถนนในแต่ละปีประมาณ 24,237 ราย หรือคิดเป็นอัตราผู้เสียชีวิต 36.2 ราย ในประชากรทุกๆ 100,000 คน และในทุกๆปีจะมีเด็กที่มีอายุต่ำกว่า 14 ปี เสียชีวิตจากอุบัติเหตุบนท้องถนนในรถยนต์ประมาณ 100 – 140 ราย แต่อย่างไรก็ตามในปัจจุบันยังไม่ปรากฏว่ามีมาตรการเฉพาะทางกฎหมายส่งเสริมความปลอดภัยสำหรับผู้โดยสารที่เป็นเด็กในรถยนต์ส่วนบุคคลเกิดขึ้น

ในประเทศไทยนั้น กฎหมายจากรฉบับปัจจุบันยังไม่ได้กำหนดมาตรการเฉพาะเพื่อส่งเสริมความปลอดภัยสำหรับผู้โดยสารที่เป็นเด็กในรถยนต์ส่วนบุคคล โดยเฉพาะอย่างยิ่งการกำหนดให้เด็กที่โดยสารในรถยนต์ส่วนบุคคลนั้นต้องนั่งในเบาะนั่งสำหรับเด็กที่ติดตั้งในรถยนต์ตลอดการเดินทาง ซึ่งกฎหมายจากรกำหนดไว้เพียงว่าให้ผู้ขับขี่และผู้โดยสารทุกคนในรถยนต์ต้องคาดเข็มขัดนิรภัยตลอดการเดินทาง แต่อย่างไรก็ตามการที่กฎหมายกำหนดให้ผู้โดยสารที่เป็นเด็กต้องคาดเข็มขัดนิรภัยไม่สามารถกระทำได้ในทางปฏิบัติและมาตรการทางกฎหมายนี้ก็ไม่สามารถบังคับใช้ได้จริงกับผู้โดยสารที่เป็นเด็ก และด้วยเหตุที่การใช้เบาะนั่งสำหรับเด็กในรถยนต์ส่วนบุคคลเป็นมาตรการเชิงสมัครใจ ดังนั้นความปลอดภัยของผู้โดยสารที่เป็นเด็กในรถยนต์ส่วนบุคคลจึงขึ้นอยู่กับดุลยพินิจของผู้ปกครองซึ่งเป็นผู้ขับขี่ว่าเห็นถึงความจำเป็นและประโยชน์ที่เด็กจะได้รับจากการใช้เบาะนั่งสำหรับเด็กหรือไม่ นอกจากนี้เบาะนั่งสำหรับเด็กในรถยนต์ที่มีจำหน่ายและวางขายในประเทศไทยทั้งผลิตขึ้นเองภายในประเทศหรือนำเข้ามาจากต่างประเทศยังไม่มีการควบคุมมาตรฐานทั้งด้านคุณภาพและความปลอดภัยของสินค้า โดยที่เบาะนั่งสำหรับเด็กในรถยนต์ยังไม่ได้ถูกกำหนดให้เป็นผลิตภัณฑ์ที่ผลิตหรือนำเข้าต้องเป็นไปตามมาตรฐานผลิตภัณฑ์อุตสาหกรรม และยังไปกว่านั้นเบาะนั่งสำหรับเด็กในรถยนต์ระบบไอโซฟิกที่เป็นไปตามมาตรฐานระหว่างประเทศไม่สามารถติดตั้งในรถยนต์ได้ทุกคัน เนื่องจากรถยนต์ส่วนมากในประเทศไทยขาดอุปกรณ์สำคัญที่เ้ารองรับการติดตั้งร่วมกับเบาะนั่งสำหรับเด็กระบบไอโซฟิก ดังนั้นจึงมีความจำเป็นที่จะต้องมีการแก้ไขกฎหมายเกี่ยวกับการกำหนดส่วนควบและเครื่องอุปกรณ์สำหรับรถยนต์

บทความนี้จะมุ่งวิเคราะห์ถึงองค์ประกอบของข้อกำหนดการบังคับใช้เบาะนั่งสำหรับเด็กในรถยนต์ส่วนบุคคล รวมถึงมาตรฐานด้านความปลอดภัยและคุณภาพของผลิตภัณฑ์เบาะนั่งสำหรับเด็กในรถยนต์ และมาตรฐานด้านความปลอดภัยของรถยนต์ ส่วนควบและเครื่องอุปกรณ์สำหรับรถยนต์เพื่อรองรับการติดตั้งเบาะนั่งสำหรับเด็กระบบไอโซฟิก โดยศึกษากฎหมายของต่างประเทศโดยเฉพาะอย่างยิ่งในประเทศที่มีมาตรการเสียชีวิตจากสาเหตุการเกิดอุบัติเหตุบนท้องถนนในระดับต่ำ เช่น สหภาพยุโรป ประเทศอังกฤษและสหรัฐอเมริกา

จากการศึกษาวิจัยนี้ สมควรเสนอให้มีการแก้ไขกฎหมายจากรให้มีการบังคับใช้เบาะนั่งสำหรับเด็กในรถยนต์ส่วนบุคคล มีการพิจารณามาตรฐานบังคับผลิตภัณฑ์เบาะนั่งสำหรับเด็กในรถยนต์โดยอ้างอิงจากมาตรฐานระหว่างประเทศ และแก้ไขกฎหมายการกำหนดส่วนควบและเครื่องอุปกรณ์สำหรับรถยนต์เพื่อรองรับการติดตั้งเบาะนั่งสำหรับเด็กระบบไอโซฟิก

**คำสำคัญ:** กฎหมายบังคับใช้เบาะนั่งนิรภัยสำหรับเด็กในรถยนต์, เบาะนั่งสำหรับเด็กในรถยนต์, ระบบยึดแบบไอโซฟิกและจุดยึดไอโซฟิกทอปเทเทอร์, มาตรฐานด้านความปลอดภัยของรถยนต์ ส่วนควบและเครื่องอุปกรณ์สำหรับรถยนต์

## **1) INTRODUCTION**

According to the global status report on road safety 2015, Thailand is on the verge of becoming the country with the highest fatality rate in road accidents in the world. The fatality rate in road accidents in Thailand is estimated by the World Health Organization to be approximately 36.2 per 100,000 population,<sup>1</sup> compared to the global fatality rate in road accidents which is approximately 17.4 per 100,000 population.<sup>2</sup> At the current rate, Thailand is approximately two times beyond the global fatality rate in road accidents and it is estimated that three percent of estimated GDP of the nation is lost due to road accidents.<sup>3</sup> Every year, approximately 100 - 140 children, who are under fourteen years of age, perish in motor vehicles from traffic accidents.<sup>4</sup>

According to this information and statistics of fatality rate in road accidents, the severe situation in Thailand is evidence of the poor enforcement of Traffic Laws and the lack of legal measures to protect and reduce the fatalities and the bodily injury of children who travel in personal motor vehicles.

Passive safety systems on motor vehicles are determined to be one solution to reduce the risk of fatalities in road accidents. Most of the countries in the world have implemented passive safety systems on motor vehicles programs in the form of legal measures to enforce compulsory use of the adult safety belt. However, the benefits of these programs are intended to protect only mature persons not children whose bodies are unfit to use or utilize an adult safety belt.<sup>5</sup> Consequently, passive safety systems, especially for children, should be implemented in the form of legal measures enforcing compulsory use of child car seats on motor vehicles in order to reduce bodily injury and protect against the death of children from road accidents.

According to research, child car seats are highly effective in protecting children. Children who are provided with an appropriate child car seat when travelling in motor vehicles are less likely to be injured or killed in road accidents than children who are unrestrained without any safety device and children who are

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<sup>1</sup> World Health Organization, 'Global status report on road safety 2015' (WHO Press, 2015) 235 <[http://www.who.int/violence\\_injury\\_prevention/road\\_safety\\_status/2015/en/](http://www.who.int/violence_injury_prevention/road_safety_status/2015/en/)> accessed 1 December 2016

<sup>2</sup> Ibid 5

<sup>3</sup> Ibid 235

<sup>4</sup> CSIP 'Be cautious when installing a child car seat' (Child Safety Promotion and Injury Prevention Research Center (CSIP), 7 April 2016 <<http://csip.org/wordpress/2016/04/07/>> accessed 25 May 2017

<sup>5</sup> Tami Toroyan and Margie Peden, 'Youth and Road Safety' (Geneva, WHO Press, 2007) 31 <[http://apps.who.int/iris/bitstream/10665/43607/1/9241595116\\_eng.pdf](http://apps.who.int/iris/bitstream/10665/43607/1/9241595116_eng.pdf)> accessed 1 December 2016

using an adult safety belt. Although, the effectiveness of reducing injury and fatality rate in road accidents does vary and depends upon the type of child car seats. For example, an infant who occupies a rearward-facing child car seat will be far less likely to be injured or die in a road accident, 90% less when compared to an infant who does not occupy a child car seat at all time. Furthermore, a toddler who occupies a forward-facing child car seat will be far less likely to be seriously injured in a road accident when compared to a toddler utilizing an adult safety belt, 80% less likely. An older child who occupies a booster seat will have a 77% less chance of injury in a road accident compared to an older child who does not utilize any safety device.<sup>6</sup>

Reflecting on the effectiveness of reducing bodily injury and fatality rates in road accidents, child car seats should be designed and manufactured to conform with a national standard<sup>7</sup> or in line with international standards.<sup>8</sup> Thailand is also lacking a national standard controlling product safety, quality and efficiency of child car seats. Consequently, there are child car seats in Thai markets which are not qualified as safe and adequate products that are able to protect children from injury and death on road accidents.

In the world-leading countries where the laws on the compulsory use of child car seats are enforced, improper installation or misuse of a child car seat is the primary cause of reduced effectiveness of protection.<sup>9</sup> Parents have to study and pay strong attention to the manual or instruction materials on how to install a child car seat with an adult safety belt in motor vehicles. Additionally, the installation of child car seats in motor vehicles by means of securing it with an adult safety belt usually requires a fair amount of time to achieve the proper fit. For this reason, child car seats with new technology systems for simple installation have been designed and introduced to parents as alternative safer products known as the "ISOFIX child car seat". However, this type of child car seat requires motor vehicles to be compulsorily fitted with additional compatible new technology systems which are called the "ISOFIX anchorage systems and ISOFIX top tether anchorage" in order to support the installation systems of the ISOFIX child car seat. Consequently, motor vehicles in countries where parents recognized the benefit of the new technology to cope

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<sup>6</sup> Lotta Jakobsson, Isaksson-Hellman, Lundell, 'Safety For The Growing Child-Experiences From Swedish Accident Data' (Paper Number 05-0330) 1 <<http://www-nrd.nhtsa.dot.gov/pdf/esv/esv19/05-0330-O.pdf>> accessed 1 December 2016

<sup>7</sup> Tami Toroyan and Margie Peden, (n 5) 31

<sup>8</sup> World Health Organization, 'World Report On Road Traffic Injury Prevention'(WHO Press, 2004) 134 <

[http://www.who.int/violence\\_injury\\_prevention/publications/road\\_traffic/world\\_report/en/](http://www.who.int/violence_injury_prevention/publications/road_traffic/world_report/en/)> accessed 1 December 2016

<sup>9</sup> Tami Toroyan and Margie Peden, (n 5) 30

with the problem of improper installation or misuse of child car seats (securing child car seat with an adult safety belt), the law requires motor vehicles for carriage of passengers to be compulsorily fitted with the ISOFIX anchorage systems and the ISOFIX top tether anchorage.

In Thailand, under current Motor Vehicle Law, the ISOFIX anchorage systems and ISOFIX top tether anchorage are not compulsory equipment that are required by law to be fitted on motor vehicles. For this reason, Thailand is dependent on vehicle manufacturers to design and construct each model of motor vehicle to include the ISOFIX anchorage systems and the ISOFIX top tether anchorage. Therefore, on many vehicles in Thailand the ISOFIX child car seats cannot be installed as they are not fitted with the necessary compatible ISOFIX technology systems.

## **(II) THE COMPULSORY USE OF CHILD CAR SEATS IN MOTOR VEHICLES AND SAFETY STANDARDS FOR CHILD CAR SEATs AND ISOFIX SYSTEMS IN FOREIGN LAW**

### **i) European Union**

The very first EU legislation concerning the compulsory use of child car seat was introduced in the Council Directive 91/671/EEC<sup>10</sup> where it ensured that children who are under 12 years of age or less than 150 cm in height shall be restrained by an approved child car seat suitable for the height and weight of the child.<sup>11</sup> However, the Directive left some exceptions for children of particular ages who are allowed to be restrained by adult safety belts instead of child car seats.

In 2003, The Directive 91/671/EEC was amended by the Directive 2003/20/EC.<sup>12</sup> It provided a significant transformation in three elements related to the compulsory use of child car seats. First, exemptions under the Directive 91/671/EEC were eliminated<sup>13</sup>, secondly, appropriate child car seats should be approved in accordance with the technical requirements of UNECE Regulation

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<sup>10</sup> Council Directive of 16 December 1991 on the approximation of the laws of the Member States relating to compulsory use of safety belts in vehicles of less than 3, 5 tonnes [1991] OJ L 373/26

<sup>11</sup> Dir 91/671/EEC, OJ L 373/27 Art 2 Para 2

<sup>12</sup> Directive 2003/20/EC amending Council Directive 91/671/EEC relating to the compulsory use of safety belts and child-restraint systems in vehicles [2003] OJ L115/63

<sup>13</sup> Dir 2003/20/EC [2003] OJ L115/65, Art 4

44.03 or its equivalent. Lastly, child car seats which are intended to be used in the front seat without deactivating the air bag system are prohibited.<sup>14</sup> Additionally, compulsory use of child car seats has been extended to motor vehicles other than passenger cars that have a number of seats not exceeding eight including the driver's seat, in particular, a vehicle for carriage of passengers consisting of more than eight seats and a motor vehicle for carriage of goods.<sup>15</sup>

Directive 2003/20/EC repealed the exception provided in Article 4 of Directive 91/671/EEC, therefore, a child who is shorter than 150 cm in height shall be restrained by an integral or non-integral child car seat suitable for the child's mass. However, Member States may allow particular children to be restrained by an adult safety belt<sup>16</sup> or not to be restrained in special circumstances.<sup>17</sup> However, children under three years of age are not allowed to be transported without any restraint by child car seat.<sup>18</sup> Additionally, children under three years of age are also not allowed to be transported with restraint by child car seat, used in the front seat of a motor vehicle without deactivation of the air bag system.<sup>19</sup>

Motor vehicles in category M (motor vehicles for carriage of passengers) and N (motor vehicles for carriage of goods) are required by Regulation (EC) 661/2009 to be compulsorily fitted with ISOFIX anchorage systems and ISOFIX top tether anchorage.<sup>20</sup>

## **ii) The United Kingdom**

There are many UK legislative and statutory instruments dealing with the compulsory use of child car seats. Under the Road Traffic Act 1988, abbreviated as

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<sup>14</sup> Opinion of the Economic and Social Committee on the 'Proposal for a Directive of the European Parliament and of the Council amending Council Directive 91/671/EEC on the approximation of the laws of the Member States relating to compulsory use of safety belts in vehicles of less than 3, 5 tonnes'[2001] OJ C260/30

<sup>15</sup> Dir 2003/20/EC [2003] OJ L115/64, Art 1 Para 2(1)

<sup>16</sup> Dir 2003/20/EC [2003] OJ L115/64, Art 1 Para 3(1)(a)(ii)

<sup>17</sup> Dir 2003/20/EC [2003] OJ L115/64, Art 1 Para 3(1)(a)(iii)

<sup>18</sup> Dir 2003/20/EC [2003] OJ L115/64, Art 1 Para 3(1)(a)(i)

<sup>19</sup> Dir 2003/20/EC [2003] OJ L115/64, Art 1 Para 3(1)(b)

<sup>20</sup> Regulations (EC) No 661/2009 of The European Parliament and of The Council concerning type-approval requirements for the general safety of motor vehicles, their trailers and systems, components and separate technical units intended therefor [2009] OJ L200/8 Art 5 Para 3(e)

‘RTA 1988’ hereafter, the law empowers the Secretary of State to legislate regulations concerning requirements and exceptions for compulsory use of child car seats for persons who are under the age of fourteen occupying a motor vehicle for the carriage of passenger not exceeding eight seats including the driver’s seat.<sup>21</sup>

Motor Vehicles (Wearing of Seat Belts) Regulations 1993, abbreviated as ‘MV(WSB)R 1993’ hereafter, the Motor Vehicles (Wearing of Seat Belts) (Amendment) Regulations 2006, abbreviated as ‘MV(WSB)(A)R 2006’ hereafter, and The Motor Vehicles (Wearing of Seat Belts) (Amendment) (No.2) Regulations 2015, abbreviated as ‘MV(WSB)(A)(2)R’ hereafter, lay down detailed definitions of child car seat and children who are required by law to occupy a child car seat, characteristics and prescriptions of appropriate child car seats. Some exemptions for the use of child car seats for children travelling in vehicles are also described in the said statutory instruments.

RTA 1988 requires that a person who is under the age of fourteen shall be restrained by an appropriate child car seat when travelling in vehicles. A small child who is under the age of twelve and less than 135 centimeters in height shall be restrained by an approved child car seat in accordance with UN-ECE Regulation No. 44 amendment series of 03 or 04, or UN Regulation No 129.<sup>22</sup> A large child who is under the age of fourteen but higher than 135 centimeters shall be restrained by an approved child car seat in accordance with UN-ECE Regulation No 44 amendment series of 03 or 04, or UN-Regulation No 129,<sup>23</sup> or alternatively may be allowed to be restrained by an adult safety belt instead of an approved child car seat.<sup>24</sup>

Regulation (EC) 661/2009 is directly applicable to all Member States of the European Community without requiring ratification to the national domestic laws. However, on a national level, The Road Vehicles (Approval) Regulations 2009 which are the UK statutory instruments also ensures that technical requirements for type-approval of motor vehicle on general safety, in particular compulsory installation of ISOFIX anchorages systems and ISOFIX top tether anchorage on all new vehicles, shall be applied effectively. Therefore, all new passenger vehicles in category M and motor vehicles for carriage of goods in category N are required to install the ISOFIX anchorage systems and ISOFIX top tether anchorage in order to be used in conjunction with the ISOFIX child car seat.

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<sup>21</sup> Road Traffic Act 1988 (RTA 1988), s 14 para 1, 6 and s 15 para 9

<sup>22</sup> MV(WSB)R 1993, reg 2 para 8(a) and reg 8 para (1)(a), (2)(a)-(c) amended by MV(WSB)(A)R 2006, reg 10 para 8 and amended by MV(WSB)(A)(2)R 2015, reg 4, 5

<sup>23</sup> MV(WSB)R 1993, reg 2 para 8(b) and reg 8 para (1)(c), (2)(a), (2)(c) amended by MV(WSB)(A)R 2006, reg 10 para 8 and amended by MV(WSB)(A)(2)R 2015, rec 4, 5

<sup>24</sup> MV(WSB)R 1993, reg 2 para 8(b) amended by MV(WSB)(A)R 2006, reg 10 para 8



### **iii) The United States of America and The State of California**

In the US, the first compulsory use of child car seat was legislated in the State of Tennessee in 1978. The law obliged parents to restrain their children in the vehicle by means of a child car seat that meets the federal standard requirements.<sup>25</sup> After that, other States started emulating the law relating to young passengers riding in vehicles throughout the US until the last State enacted child car seat law in 1985.<sup>26</sup> In regards to child car seat law, all States require children who travel in vehicles to be restrained by child restraint devices. However, the detailed substantive law relating to compulsory use of child car seats is varied, differing from State to State.<sup>27</sup> The reason that all States have further differences of child passenger safety law is that there is no intention at the federal level to indicate or lay down substantive law relating to child car seats. The law depends upon the recognition of advanced scientific knowledge to support the effectiveness of child car seat policy in each State. Consequently, the law legislators tended to enact legislation and regulations based on their own State's scientific knowledge which may be different in substantial detail from child passenger safety measures.<sup>28</sup>

#### **California Vehicle Code**

The law requires children who are under eight years of age to be restrained by appropriate child car seats, which is in conformity with the federal motor vehicle safety standards, in rear seat position of the vehicle.<sup>29</sup> All children who are under eight years of age shall be required by the law to use an appropriate child car seat related to their weight and size as described in the instructions, label, or manual of the child car seat that the manufacturer provided. In other words, parents shall select proper restraining device which is appropriate for their

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<sup>25</sup> Deborah D. Stewart, 'More than Forty Years of Progress for Child Passenger Protection, A Chronicle of Child Passenger Safety Advances in the USA (Safe Ride News, 2009) 2  
<<http://saferidenews.com/srndnn/LinkClick.aspx?fileticket=NIPfcuqNL1U%3D&tabid=375>>  
accessed 2 November 2016

<sup>26</sup> Ibid 3

<sup>27</sup> Child Passenger Safety Laws (Governors Highway Safety Association, November 2016)  
<[http://www.ghsa.org/html/stateinfo/laws/childsafety\\_laws.html](http://www.ghsa.org/html/stateinfo/laws/childsafety_laws.html)> accessed 2 November 2016

<sup>28</sup> Jin Yang Bae, Evan Anderson, Diana Silver, 'Child Passenger Safety Laws in the United States, 1978-2010: Policy Diffusion in the Absence of Strong Federal Intervention' (Social Science & Medicine, January 2014) 2, 9

<<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3899584/>> accessed 2 November 2016

<sup>29</sup> California Vehicle Code, Art 3.3, s 27360 para (a)

children's weight and/or height such as infant rearward facing car seat, or convertible forward facing child car seat, or booster seat. Additionally, all restraining devices shall be required to be manufactured in conformity with the FMSS No. 213 which is the federal motor vehicle safety standards for child restraint systems. Moreover, on January 1, 2016<sup>30</sup> the California Vehicle Code will be effective and enforceable on the compulsory use of rearward facing infant seats by children who are under two years of age unless their weight exceeds 40 pounds, or their height exceeds 40 inches.<sup>31</sup>

Children who are eight years of age or over but not exceeding sixteen years old are required to be restrained by an appropriate child car seat or adult safety belt if it is fitted properly for the children's body.<sup>32</sup> Furthermore, the law also requires children who are eight years of age but not exceeding sixteen years old to be restrained in child car seats which are manufactured in conformity with the federal motor vehicle safety standards for child restraint systems, also known as FMVSS No. 213. The law provides an alternative restraining device for a child who has outgrown eight years old by using an adult safety belt instead of a typical child car seat or booster seat. However, in case a child is over eight years of age but an adult safety belt does not properly fit the child's body, the law still requires a child to use a booster seat lifting a child's body up to secure properly with an adult safety belt.<sup>33</sup>

The law requires a child who is under eight years of age to be restrained by an appropriate child car seat on the rear seat of the vehicle. However, the law lays down exemptions and allows a child to occupy the front seat of vehicle with appropriate child car seat in particular circumstances, for example, the vehicle has no rear seat, the rear seats of the vehicle are rearward facing seats, or the rear seats of the vehicle are fully occupied by other children who are under seven years of age.<sup>34</sup> However, the law prohibits a child occupying the front seat of a vehicle in rearward facing child car seat if the vehicle is fitted with an active front airbag.<sup>35</sup>

In the US, Child restraint anchorage systems, or also known as LATCH systems which stand for "Lower Anchors and Tethers for Children", are

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<sup>30</sup> California Vehicle Code, Art 3.3, s 27360 para (b)

<sup>31</sup> California Highway Patrol 'Child Safety Seats' (California Highway Patrol) <<https://www.chp.ca.gov/programs-services/programs/child-safety-seats>> accessed 3 November 2016

<sup>32</sup> California Vehicle Code, Art 3.3, s 27360.5 para (a)

<sup>33</sup> Car seat Organization 'Enforcing California Restraint Laws for Children' (23 February 2013)

<[http://www.carseat.org/Legal/99\\_Enf.pdf](http://www.carseat.org/Legal/99_Enf.pdf)> accessed 3 November 2016

<sup>34</sup> California Vehicle Code, Art 3.3, s 27363 para (e)(1)-(6)

<sup>35</sup> California Vehicle Code, Art 3.3, s 27363 para (f)

vehicle devices intended to be fitted in vehicles functioning in connection with child car seats that have lower anchorage attachment and top tether strap connector. LATCH systems were invented to eliminate improper installation or misuse of typical child car seats using an adult safety belt to secure child car seat within the vehicle's structure. The NHTSA has issued Federal motor vehicle safety standards on child restraint anchorage systems prescribed in 49 CFR 571.225 Standard No. 225: Child Restraint Anchorage Systems. The scope of this standard is applicable to child restraint anchorage systems providing requirements relating to the proper location of LATCH systems and strength performance assuring the effectiveness of securing child car seats within the vehicle's structure.<sup>36</sup> FMVSS Standard No. 225 applies to passenger car, truck and multipurpose passenger vehicle including buses.<sup>37</sup>

### **(III) ANALYSIS ON THE LEGAL APPROACH FOR IMPLEMENTING THE COMPULSORY USE OF CHILD CAR SEATS IN PERSONAL MOTOR VEHICLES AND ESTABLISHING CHILD CAR SEAT STANDARDS AND ISOFIX SYSTEMS IN THAILAND**

#### **i) The Absence of Law Concerning the Compulsory Use of Child Car Seat on Personal Motor Vehicles**

The Road Traffic Act imposes the compulsory use of safety belts on the driver and all passengers in a motor vehicle. This means that children or young passengers are defined as a typical passenger, therefore, they are required by the law to wear a safety belt while travelling without exception. Under current passenger safety law relating to compulsory use of safety belts, the law does not pay attention to children who are travelling with their family as passengers in motor vehicles. Only mature persons will be properly equipped with safety belts for reducing and protecting bodily injury or fatality in unforeseen accidents on the road. Meanwhile, the children, who are the subject of absolute rights of their bodies and lives, do not receive the same level of protection by the law when compared to their parents. Even though in some cases, children can apply, for safety protection, an adult safety belt. Such measures do not generate appropriate safety for children since an adult safety belt is designed and constructed for adult protection. Additionally, in car crash events, children who are restrained by adult safety belts may be further injured by the safety belt itself, not by a direct result of the car crash.

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<sup>36</sup> 49 CFR 571.225 s 1

<sup>37</sup> 49 CFR 571.225 s 2

## **ii) The Absence of Laws concerning Safety Standards of Child Car Seat**

In relation to child car seats under Thai Industrial Standards, there is currently no general standard or compulsory standard determined by the Ministry of Industry. Therefore, child car seats in Thailand lack a legal measure to control safety standards and requirements of child car seats that are manufactured by Thai entrepreneurs or imported from outside countries. In regards to the safety requirements, specifications, and inspection of child car seats prescribed by compulsory Thai Industrial Standards, the international standard concerning technical requirements of child car seats should be adopted and utilized instead of establishing national standards anew in order to develop safety standards and technical requirements for child car seats in a short period of time and to be in line with developed countries where child car seats have been invented by automotive specialists and used for children in motor vehicles for a long times.

## **iii) Inadequacy of Motor Vehicle and Equipment Safety Standards**

Subject to the Motor Vehicle Act B.E. 2522 (1979), the vehicle type-approval is in the form of the combination of two legislative instruments; (1) the general requirement of compulsory component parts and equipment to be fitted on motor vehicles as prescribed by Ministerial Regulations and (2) the type-approval of vehicle's equipment prescribed by Notification of Department of Land Transportation.

The general requirement of compulsory component parts and equipment to be fitted on a motor vehicle is the administrative legislation that lays down component parts and equipment which are required by the law to be fitted on each type of motor vehicle. The Ministerial Regulations prescribes the required necessary component parts and equipment that must be fitted on each type of motor vehicle, not including the technical requirements, specifications, installations and approval procedures of the vehicle's equipment.

In relation to type-approval of the vehicle's equipment, the Notification of Department of Land Transport specifies the technical requirements, specifications, installation and approval procedures of each compulsory component part and equipment that are prescribed by the Ministerial Regulations. The ISOFIX anchorage systems and ISOFIX top tether anchorage are equipment used in connection with ISOFIX child car seats. If this equipment is not fitted on personal vehicles compulsorily, the ISOFIX child car seat would not be able to be installed

on those motor vehicles. Consequently, it is necessary that ISOFIX anchorage systems and ISOFIX top tether anchorage shall be added as compulsory component parts and equipment that are required by Ministerial Regulation to be fitted on all personal motor vehicles.

Furthermore, the technical requirement, specifications, installation and approval procedure for the ISOFIX anchorage systems and ISOFIX top tether shall be implemented and determined by the Director-General of the Department of Land Transport and promulgated in Notification of Department of Land Transport. Additionally, the technical requirements of ISOFIX anchorage systems and ISOFIX top tether anchorage which will be annexed to the Notification of Department of Land Transport shall adopt the international standard in order to implement type-approval of this equipment in a short period of time and improve safety standards and requirements to be in line with international standards.

#### **iv) Incompatibility of ISOFIX Child Car Seat and Motor Vehicles without ISOFIX Systems**

Nowadays, there are two types of child car seat distributed in Thailand; (1) general child car seats and; (2) ISOFIX child car seats. Both general child car seats and ISOFIX child car seats may be approved in accordance with UN Regulation No. 44 if it is manufactured in European Countries and some countries outside EU that adopt the UN Regulation No.44 as a technical requirement and safety standard for child car seats. Thailand currently lacks improved law concerning the compulsory automotive equipment and parts which are required by the law to be fitted on motor vehicles, in particular, ISOFIX anchorage systems and ISOFIX top tether anchorage. Consequently, only general child car seats which are installed in motor vehicles by using an adult safety belt are compatible with all models of motor vehicle. On the other hand, ISOFIX child car seats which are fitted on motor vehicles by using ISOFIX attachment are compatible with specific models of motor vehicles which are fitted with ISOFIX anchorage systems and ISOFIX top tether anchorage. Therefore, parents who buy an ISOFIX child car seat for their children may encounter installation problems in a motor vehicle without ISOFIX anchorage systems and ISOFIX top tether anchorage fitted on their vehicle.

## **(IV) CONCLUSIONS AND RECOMMENDATIONS**

### **i) Conclusions**

According to this study, Thailand is on the verge of becoming the country where the highest rate of fatality in road accidents occurs worldwide. The legal measures regarding intervention in severe situations, particularly the compulsory use of child car seats for children who travel in personal motor vehicles with their family, has never been introduced and prescribed in the form of legislation. National safety standards for child car seats have not been determined to ensure consumers that the product they buy will be safe for use and effectively protect their children from bodily injury and fatality caused by road accidents. The laws concerning the safety standards of motor vehicles, particularly compulsory component parts and equipment to be fitted on motor vehicles, needs to be improved in order to support the use of ISOFIX child car seats or new enhanced child car seats to eliminate the improper installation or misuse of child car seats.

For this reason, Thailand should implement legal safety measures on motor vehicles for children in the form of compulsory use of child car seats, determine and record a national compulsory product standard for child car seats, and improve the general safety requirements of motor vehicles by adding enhanced technology equipment to be compulsory equipment fitted on every motor vehicle for supporting the use of child car seats. For effective legal enforcement, the law should be applicable to social and economic conditions in Thailand. Consequently, the law concerning compulsory use of child car seat, Thai Industrial Standards for child car seats and ISOFIX anchorage systems and ISOFIX top tether anchorage that are required by law to be fitted on motor vehicles should be implemented and amended phase by phase respectively.

### **ii) Recommendations**

According to the Road Traffic Act B.E. 2522 (1979), the legal provision concerning the compulsory use of child car seats should be added in Chapter XVII, following paragraph 2 of Section 123. The provision shall specify essential elements of young passenger safety in motor vehicle as follows;

For example *“The driver of a vehicle must render the passenger who is under the age of 12 or less than 135 centimetres in height, to be restrained with an appropriate child car seat while travelling.”*

In paragraph 3, the provision shall be amended in order to empower the Commissioner-General to be able to prescribe the category and type of vehicle, the procedure of using child car seat, the characteristics of an appropriate child car seat and the exception of non-compliance with the law.

For example, “The category or type of vehicle, character and procedure of using seat belt under paragraph two and ***the use of child car seats under paragraph three*** shall be prescribed by the Commissioner-General by publication in the Government Gazette.”

Under the Industrial Product Standards B.E. 2511 (1968), child car seats should be determined by a compulsory standard under Section 17. Thai Industrial Standard for child car seats (TIS: xxx - xxx for child car seat) shall be promulgated by Royal Decree and published in the Government Gazette.

In regard to TIS for child car seats, it should adopt the uniform provision concerning the approval of child restraint systems (child car seat) prescribed in UN-Regulation No. 44, amendment of series 04 annexed to the 1958 Agreement as Thai Industrial Standard.

Under the Motor Vehicle Act B.E. 2522 (1979), personal motor vehicles shall be compulsorily fitted with component parts and equipment prescribed in Ministerial Regulations on compulsory component parts and equipment to be fitted on motor vehicles B.E. 2551 (2008). Consequently, ISOFIX anchorage systems and ISOFIX top tether anchorage should be compulsory component parts and equipment to be fitted on personal motor vehicles.

Thus, Article 3 of Ministerial Regulation on compulsory component parts and equipment to be fitted on motor vehicles B.E. 2551 (2008) shall be amended as follows;

“Inter-provincial taxi, taxi, service vehicles and personal vehicles shall be fitted with component parts and equipment specified in the following list;

***(29) ISOFIX anchorage systems and ISOFIX top tether anchorage***”

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