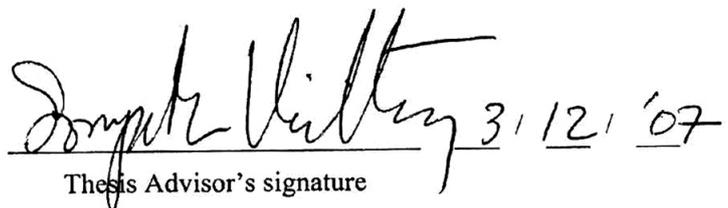Thanorm Choltawechok 2007: A Comparison of Impact Factor on Simple Span Bridge Girders due to Ten Wheel Trucks and The AASHTO Standard Truck. Master of Engineering (Civil Engineering), Major Field: Civil Engineering, Department of Civil Engineering. Thesis Advisor: Associate Professor Sompothi Vivithkeyoonvong, Ph.D. 147 pages.

Adoptions of the AASHTO standard truck in the design of bridge structures are still favorable in Thailand where most of heavy trucks are ten-wheeled trucks. A ten-wheel truck has configuration, gross vehicle weight and axle loads differs from the AASHTO Standard truck. So adoption of the AASHTO standard truck will not be safe enough for the design of bridge structure in Thailand. This study aims to compare the impact factors for bending moments and shears of 10 to 39 m. simple span bridge girders due to 21,25 and 35 tons ten-wheel truck with the AASHTO standard truck. The velocities of ten-wheel truck across bridge span are varied from 0, 2.5, 5.0 and increases by 5.0 to 60.0 Km./hr. inclusively. The result of the studies are the impact factors for bending moments and shears of single 21, 25 and 35 tons ten-wheel truck equal 0.75, 0.52, 0.52 and 0.85,0.71,0.71 for span lengths of 10 to 19 m., 1.13, 1.13, 1.13 and 1.35, 1.35 , 1.35 for span lengths of 20 to 29 m., and 1.78,1.78, 1.78 and 1.98, 1.98, 1.98 for span length of 30 to 39 m. respectively. While the equations of impact factor for bending moments and shears of single 21,25 and 35 tons ten-wheel truck are $-0.2091+0.3320 \ln L$, $-0.4014+0.3054 \ln L$, $-0.4825+0.0507L$ and $0.4424+0.1427 \ln L$, $0.2453+0.0216L$, $-0.4255+0.0593L$ for span lengths of 10 to 19 m. $0.2626e^{0.0497L}$, $-0.5872+0.0594L$, $-0.5872+0.0594L$ and $0.2661e^{0.0562L}$, $-0.5110+0.0641L$, $-0.5110+0.0641L$ for span lengths of 20 to 29 m., and $0.3389e^{0.0426L}$, $0.3389e^{0.0426L}$, $0.3389e^{0.0426L}$ and $0.4677e^{0.0371L}$, $0.4677e^{0.0371L}$, $0.4677 e^{0.0371L}$ for span length of 30 to 39 m. respectively, and L is span length.

Student's signature	Thesis Advisor's signature 3 / 12 / '07