

# The Development of Parameters and Warning Algorithms for an Intersection Bus-Pedestrian Collision Warning System

張建彥, 張婷瑋

Transportation Technology and Logistics Management

Management

axle@chu.edu.tw

## Abstract

This study presents the conceptual design of an intersection bus-pedestrian collision warning system for bus drivers approaching an intersection. The basic parameters of the proposed design concept include the bus drivers' perception-reaction time, the emergency deceleration rate of the bus, and pedestrian walking speed. A bus driving simulation was designed and conducted to analyze bus drivers' responses to unexpected pedestrians crossing unsignalized intersections or signalized intersections during a green light interval for parameter analysis. The timings of auditory warnings and visual warnings, the locations for vehicle detectors and pedestrian detectors, and the locations for visual warning devices were also developed after analyzing the experimental results. The experimental results also highlight some important characteristics of bus driving behavior at intersections. Moreover, bus drivers really pay attention to the warning messages. Finally, this study develops and discusses some warning algorithms.

Keyword : Bus, Collision Warning System, Intersection, Parameter, Warning Algorithm