

大客車跟車駕駛刺激反應行為之模擬與分析

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摘要

The freeway bus companies have increased rapidly since 1996 due to the deregulation of freeway bus operation right-of-way. Bus accidents on freeway have also been steadily increasing in frequency and severity because of high passenger volume and busy transit schedules. According to the bus accident factors analysis from the National Police Agency, Ministry of the Interior in 2003 the accidents percentage due to without keeping safety driving longitudinal and lateral spacing is 20.4%. It is a very high level of accidents percentage. In order to reduce the high percentage of freeway accidents, the National Highway Police Bureau has implemented a two-stage “freeway safety enforcement” project. The first stage is to accuse five illegal driving behaviors that include driving on freeway shoulder, without keeping safety spacing, illegal lane change, slowing vehicle driving on inner lane, and big vehicle does not drive on the assigned lane. However, the driving safety spacing regulations of enforcement should be initiated in accordance with the studies of actual car following behaviors to ensure regulating the driver properly. Since the studies of driving safety in real environment have some disadvantages of high cost and high risk, we utilize the bus driving simulator (DS) to analyze the relationships and issues among driver, vehicle and environment. In addition, the analysis of car following driving behavior was limited on the passenger car and motorcycle in the past studies. It is lack of the analysis of bus driving behavior. Therefore, this study planned and designed the driving simulation scenario of freeway straight road section on sunshine weather and day time by the application of a fix-based bus driving simulator. The bus drivers with license that are working in freeway bus companies were invited to do the experiments under this designed driving simulation scenario. The stimulus-response car-following samples were collected after bus driving simulator experiments. Finally,

the fifth generation GM bus stimulus-response models with delay time of 0.5, 1, 1.5 and 2 seconds were developed by utilizing the SPSS statistical analysis software. The results of this study will be a basis of bus driving behavior studies.

關鍵字：Bus, Safety Spacing, Driving Simulator, Stimulus-Response Model.