

PROOF OF CONCEPT FOR SIMULATION BASED RE-CERTIFICATION OF COMMERCIAL DRIVER LICENSE

PROBLEM STATEMENT

The severity of accidents involving commercial vehicles, along with potential terrorist threats involving commercial vehicles, rising fuel costs, and tight budgets all demand that today's drivers operate at their highest possible performance levels. The Florida Department of Transportation and the U.S. Department of Transportation have identified operator performance and safety as major objectives in addressing these inter-modal transportation needs of the state and the nation. Among the most significant issues identified in this area are the challenge of commercial driver license (CDL) re-certification and devising a cost-effective method of identifying fraudulent CDLs, issued either through purely illegal means or as a result of inadequate training. This situation also includes those who have been grandfathered into the 1992 CDL program from the previous program without any actual driver performance assessment. Currently, no performance based re-certification process exists to ensure the capability of the driving workforce or to provide diagnosis of potential problems, either from lack of experience or improper training.

OBJECTIVES

The overall goal of this research is to explore and validate the application of computer-based and simulation-based technologies to the commercial driving community. The objective was to validate a newly developed virtual diagnostic test application (i.e., the Virtual Check Ride System) that provides a valid, low cost process for determining drivers' skills and commercial vehicle knowledge. Research and development processes include various simulators and learning technologies to improve driver/operator safety and performance in the trucking and transportation communities.

FINDINGS AND CONCLUSIONS

The VCRS was found to offer a valid assessment of the skills required to pass the current CDL test (future research will look into the use of the VCRS as both a recertification test for the CDL and as a diagnostic tool for the trucking community). There were two main areas of testing that researchers measured: Simulation and CBT. The Simulation portion of the exam follows the CDL driving test by using a truck driving simulator to replicate the actual CDL process. The CBT portion of the experiment measures the knowledge base of the drivers in a variety of areas: general knowledge, combination vehicles, hazardous materials, air-breaks, and the conduct and content of a walk around inspection. The goal of having the CDL test in computer-based format is to establish a cost-effective way to facilitate the re-certification process.

Content testing related to the knowledge and skills necessary for safe driving was validated using 200 subjects from 6 different organizations along with samplings elements from various truck driving communities. Some of the key participants were Frito Lay, CCC, Schenk, and Roadmaster (a certified private truck driving school). Roadmaster provided certified CDL school trained and CDL-licensed subjects consisting of drivers, instructors, and subject matter experts.

BENEFITS

The primary benefit of this research was that it formally demonstrates and documents the potential utility of computer-based simulation for commercial driver license (CDL) re-certification and as a cost-effective method for identifying fraudulent CDLs. Given current testing and certification costs in manpower, vehicles, space, scheduling, and fuel, the ability to conduct a valid CDL test in two hours, under any weather conditions, and on-site (i.e. at the truck depot) could provide enormous cost savings over the much more labor and facility intensive existing process. The savings in reduction of crashes and injuries cannot be estimated at this time; however, providing a tool such as the VCR could identify potential problem drivers before incidents occur and be a major contributor to achieving the State and Federal goal of 40% reduction over the next five years.

This project was conducted by Ronald W. Tarr, of the Center For Advanced Transportation Simulation Systems at the University of Central Florida. For additional information, contact David Binder, Project Manager, at (850) 245-7900, david.binder@dot.state.fl.us