

# Evaluation of different ergonomic factors in the cabin of drivers in public transport

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## **Abstract**

An exploratory questionnaire study was conducted on perception of ergonomically relevant factors of the design of driver cabins in public transport operations. The focus was on driver's satisfaction with using different vehicles with different designs of panel boards. Of the 1500 questionnaires distributed to drivers due to low rate of return and missing answers only 403 could be considered for analysis. One third of the drivers admitted that using different types of vehicles could lead to a higher probability of error, wrong manoeuvres or delayed reactions. According to the answers given switching between different interface layouts requires an adaptation to different driving characteristics of the vehicle, characteristics of braking and different display and control settings and arrangements. One third of the drivers conceded that shifting vehicles contributes to an increase in effort especially in demanding traffic situations. Nearly two thirds of the respondents said they would support technical standards or guidelines that would enforce consistent design of vehicle panel boards. Although results could be based on a small number of questionnaires only a more systematic evaluation of working conditions in public transport operations based on representative samples of driving situations and subjective as well as observational measures seems to be urgently necessary to improve safety and well being of the drivers as well as the passengers.

## **Introduction**

Professional drivers, including drivers in public transport, present one of the most endangered professions (Hladký, 2005). Among other stressors that occur in the everyday work those of high impact for professional drivers are high demands on cognitive processes (perception, attention, memory, decision making), high responsibility, monotony of work, time pressure, social conflicts (dealing with passengers), physical stressors, such as noise and vibrations (Duffy & McGoldrick, 1990; Kompier, 1996; Kompier et al., 2000; Peters & Nilsson, 1997). For bus, trolleybus and tram drivers it is therefore necessary to successfully balance the competing demands of safety, customer-focused services and company regulations (Tse et al., 2006).

In D. de Waard, G.R.J. Hockey, P. Nickel, and K.A. Brookhuis (Eds.) (2007), *Human Factors Issues in Complex System Performance* (pp. 185 - 192). Maastricht, the Netherlands: Shaker Publishing.