IFA
Institut für Arbeitsschutz der
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Focus on IFA's work

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The use of VDUs at drivers' workplaces

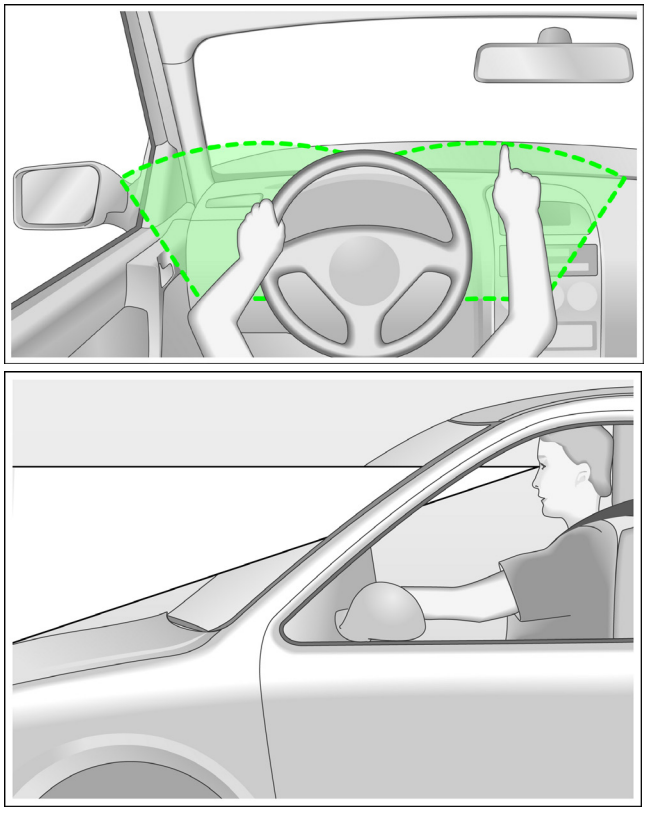
Problem

The work of professional drivers no longer consists solely of driving a vehicle and of associated tasks such as loading, but increasingly also of operating on-board and VDU-controlled information and communications systems. In occupational practice, these systems, which frequently exploit satellite and mobile telephony infrastructures, are used for example for the issuing of jobs from a control centre, and for scheduling and navigation by the drivers themselves. Their use, in particular at drivers' workplaces requiring a high level of attention and of high relevance to safety, leads to a higher accident risk as a result of distraction, obstruction of vision, and stress.

Trends in technical development, particularly miniaturization, are frequently not in line with ergonomic standards, and appropriate human-machine communication is often neglected. The use of information and communications equipment and the associated tasks increase the overall requirements, and therefore also stress, imposed upon drivers.

Activities

In a number of applications of IT-supported drivers' workplaces, including airport tractors and buses, participatory field observations and quantitative surveys were first conducted. In the process, the technical, ergonomic, work organizational and work environment conditions were identified, together with the direct and indirect stresses upon the employees.



Positioning of visual display units: sphere of reach at drivers' workplaces (top), driver's field of vision to be kept clear (below)

Literature surveys and interviews with experts yielded further results concerning specific stresses and hazards.

Results and Application

A series of problems were identified, and design proposals developed. Besides the purely ergonomic stresses (such as reflecting VDU surfaces, user-unfriendly user interfaces, constrained postures), these also include factors such as longer waits for responses from the VDU following an input, incomplete information from the VDU on actions to be performed, and even system crashes or incomprehensible error messages.

A further need for design measures concerns the ease of operation of the VDU and communication with the control centre, and unsatisfactory secondary organizational and social aspects of IT-supported work. In the event of technical faults, the lack of alternative courses of action may prevent the driver from continuing the work.

The results have been summarized in a DGUV Information; it provides recommendations for action and design guidelines for parties involved on the ground in companies in the areas of technology, organization and personnel (TOP model). A supplementary leaflet provides a summary of information in the form of everyday help targeted specifically at those responsible in purchasing, management and implementation.

Area of Application

Persons responsible for the purchase and use of on-board information and communications technology systems, users of such systems, all sectors

Additional Information

- Einsatz von bordeigenen Kommunikations- und Informationssystemen mit Bildschirmen an Fahrerarbeitsplätzen (DGUV Information 211-031, bisher: BGI/GUV-I 8696) (08.09). Hrsg.: Deutsche Gesetzliche Unfallversicherung (DGUV), Sankt Augustin 2009

- Bretschneider-Hagemes, M.: Informations- und Kommunikationstechnologie an Fahrerarbeitsplätzen. Hrsg.: Deutsche Gesetzliche Unfallversicherung (DGUV), Berlin 2011

Expert Assistance

IFA, Division 1: Information technology – Risk management

Literature Requests

IFA, Central Division

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