Foyer N, Poster Nr. 632

# Preventing manipulations of protective devices at machines

## Project information

- Duration: September 2003 - October 2005
- Participants: interdisciplinary project team (engineers, psychologists, ergonomists, technical supervisory staff,...)
- Project phases:
  1. Analysis of the status quo
  2. Development and integration of methods of solution,
  3. Publication of the results

## Aims of the project

**Prevention of accidents caused by manipulation of protective devices of machines**

- Empirical analysis of the frequency and the reasons for manipulative actions at protective devices of machines
- Development of methods of solution (based on specialist backgrounds)
- Integration of all methods of solution and generation of
- a model of prevention (final plan)

## Analysis of the reasons for manipulations

- Expert ratings
- Empirical analyses:
  - questionnaires

    (general part mainly applied by training centres, special part applied by the technical supervisory staff)
  - analyses of accident reports and further documents giving information about security behaviour

## First results of the expert ratings

- Structure of reasons (as given in a brainstorming via e-mail)

  Headlines:

  obstruction by protective devices, organisational reasons (management, organisational culture, information/instruction management), constructive features (machine/protective devices), group processes, operator features (cognition of hazard, ignorance, autonomy), etc.

## Contents of the questionnaire(s)

- General part (n=600; mainly applied by training centres):

  frequency estimation, general estimation why different machines are manipulated,...
- Special part (n= 300); applied in the factory by the technical supervisory staff when identifying a manipulated machine)

  description of the machine, description of the manipulation, operating mode, improvements suggested by the operator (operator = expert), ratings concerning the extent

## Methods of solution

- An interdisciplinary project team develops different solutions based on the specific backgrounds of each team member
- The methods of solution focus on all levels:

  Man - Technique - Organisation
- Inclusion of the draftsman's and operator's points of view

## Model of prevention

- Integration of all methods of solution
- Final plan, containing detailed chronological and practice-oriented suggestions
- Creating a model of prevention concerning manipulations

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