

A survey on bypassing protective devices and guards in Poland

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What is bypassing protective devices and guards?

It is incorrect or illegal act which leads to the limitation of the protective device efficiency

Examples of bypassing protective devices and guards:

- removing guards (e.g. during maintenance actions),**
- blocking limit switches,**
- reaching to a dangerous zone when a machine is on (e.g. to remove an element which is blocked).**



Research task

“Accident prevention: developing principles to stop workers bypassing protective devices and guards” - goals

- accident reports analysis,
- survey research,
- examination of machines equipped with protective devices and guards,
- working out the method of detecting devices which are susceptible to bypassing,

- raising awareness, that bypassing is a problem,
- distribute knowledge how to avoid bypassing (via trainings and publications).

Why are we doing this research? The number of protective devices which are bypassed.

Germany – OSH experts estimate that bypassing of the protective device is the reason of 25% of accidents; 14% of protective devices are bypassed temporarily and 23% - permanently [1].

Great Britain – bypassing is the reason of 12,4% of accidents (analysis of 100 raports from accidents) [2].

- [1] Lüken K, Pardon H, Windemuth D. (2006) Bypassing and defeating protective devices of machines – a multidimensional problem, INRS – Hygiene et securite du travail; 4(205):55-58.**
- [2] Steven Shaw (2010) - Machinery Accidents – Contributory factors, 6th International Conference Safety of Industrial Automated Systems, Tampere, Finlandia, 14-15 June 2010.**

Survey research – methods

Questionnaire for OSH experts and industrial engineers - groups of questions:

- estimation how often bypassing occurs,
- protective devices which are bypassed,
- operational mode in which bypassing occurs,
- assessment of the risk connected with bypassing,
- personal data.

Questionnaire for operators of machines equipped with protective devices and guards – groups of questions:

- attitude to bypassing and procedures,
- reasons of bypassing,
- assessment of the risk connected with bypassing,
- personal data.

Survey research – sample

- Questionnaires have been sent to 500 randomly chosen enterprises.
- Enterprises were from industry.
- Enterprises represent structure of companies in Poland as far as the number of employees and the branch are considered.

- 414 enterprises have not sent any answer.
- 21 enterprises answered that they did not have neither protective devices nor guards.

- 109 questionnaires from operators of machines equipped with protective devices and guards and 23 from OSH experts and industrial engineers have been analysed.

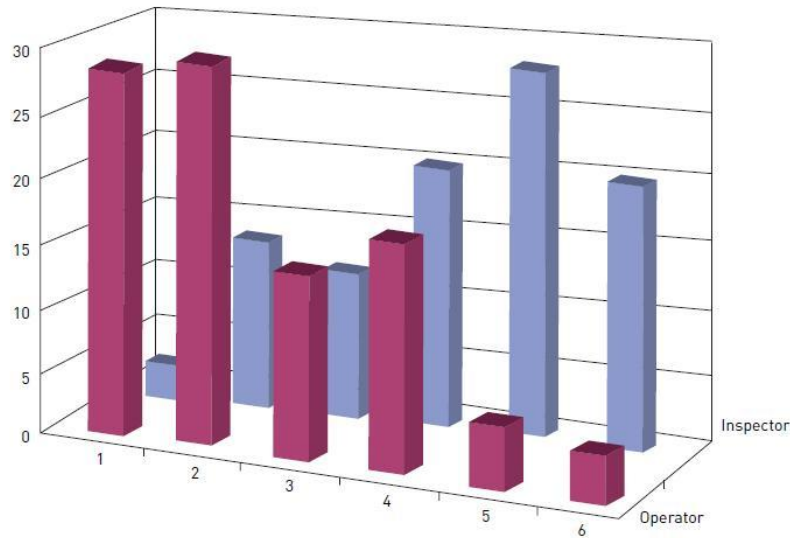
The results of survey research

Question	1*	2**
Percentage of permanently bypassed protective devices.	9,2	14
Percentage of temporarily bypassed protective devices.	4,9	23
Percentage of machinery with potential accidents due to bypassing.	40,8	51
Percentage of accidents due to bypassing	23,3	25
Percentage of machines where bypassing which is tolerated	14,6	34

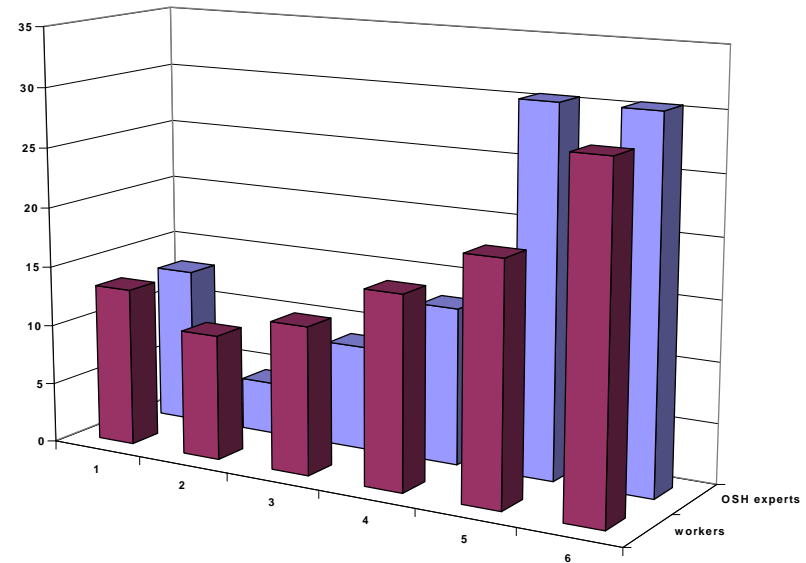
* Survey research in Poland

**Survey research in Germany; source: Lüken K, Pardon H, Windemuth D. (2006) Bypassing and defeating protective devices of machines – a multidimensional problem, INRS – Hygiene et securite du travail; 4(205):55-58.

The results of survey research – risk assessment



Survey research in Germany*



Survey research in Poland

*source: Luken K, Pardon H, Windemuth D. (2006) Bypassing and defeating protective devices of machines – a multidimensional problem, INRS – Hygiene et securite du travail; 4(205):55-58

Thank you for your attention

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