

Analysis and Assessment of Earth Moving Equipment for the Building Material Industry, under special Consideration of Occupational Health and Safety

Awarding authority:

Steinbruchs-Berufsgenossenschaft



by:

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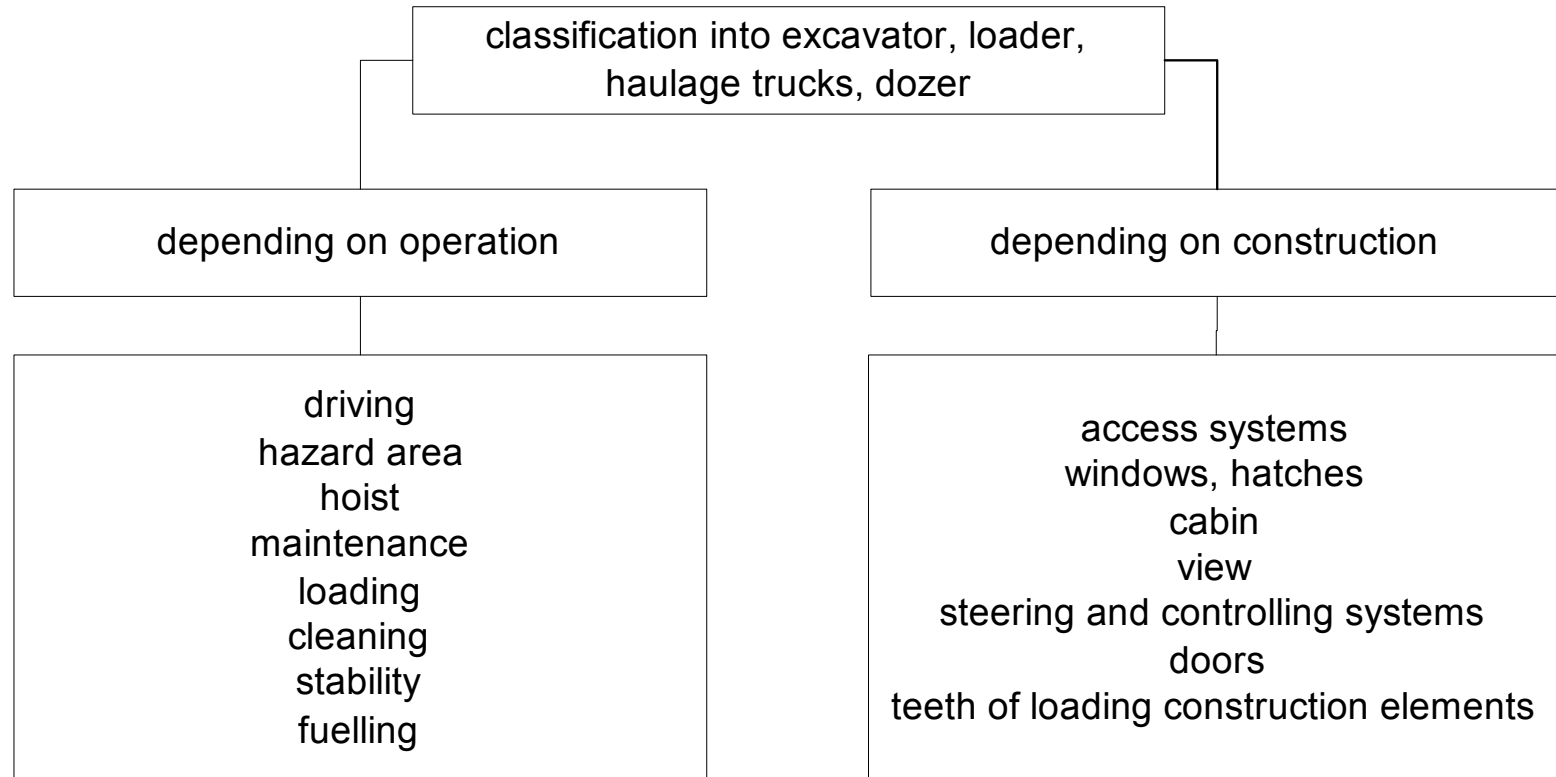


Survey at the companies of the quarry industry

- Development of a questionnaire for the company management / the entrepreneur
- Development of a questionnaire for the staff
- Compilation of information about near-accidents and construction failures
- Compilation of suggestions of improvement and the safe operation of the equipment



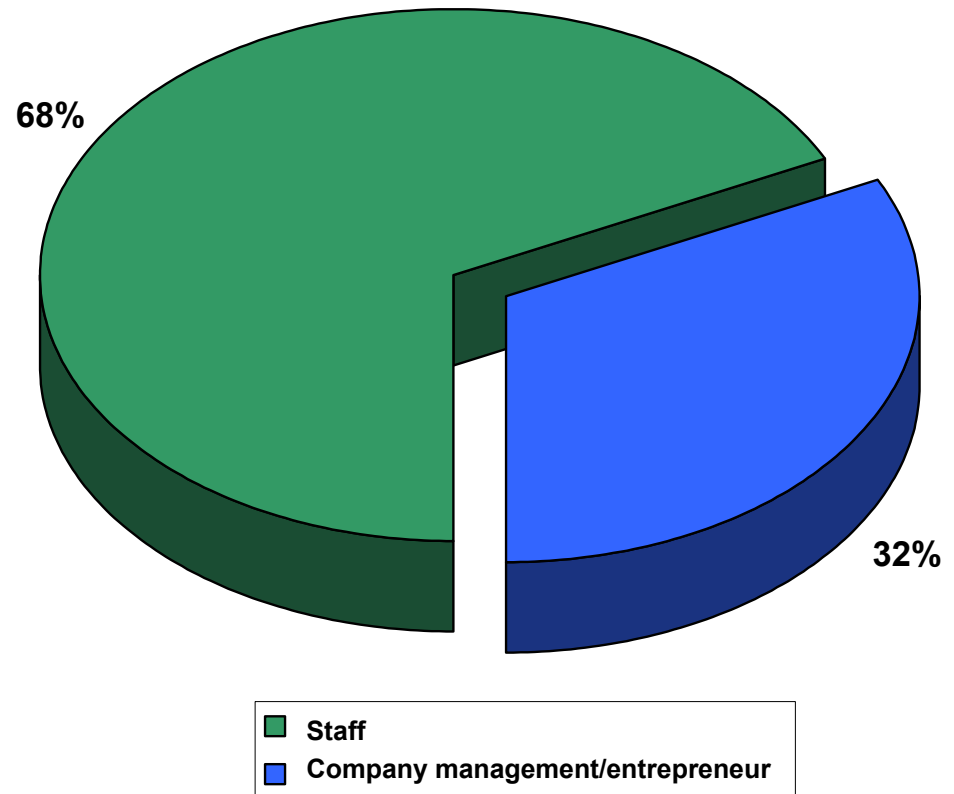
Approach to analyze the data of the accidents



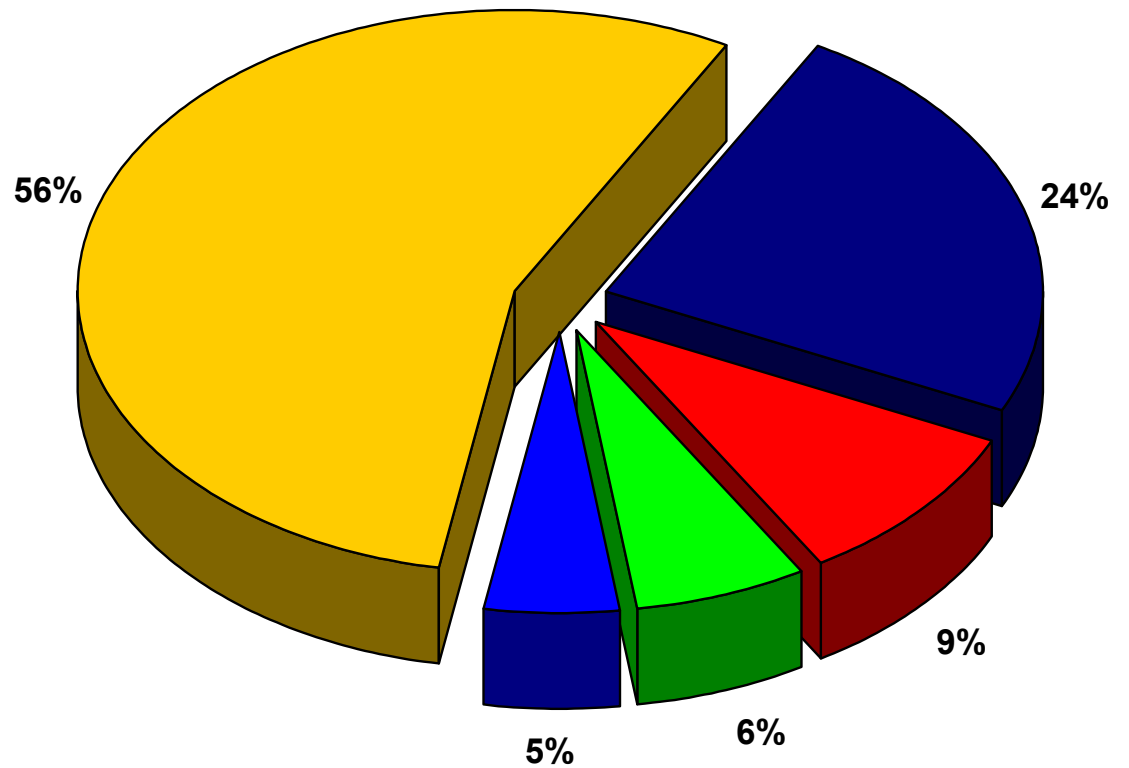
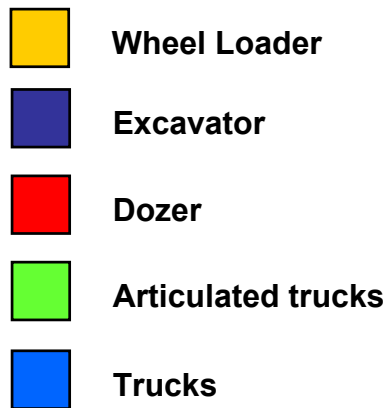
Evaluation of the survey

- 2800 companies were contacted
- 983 questionnaires were sent back
- Staff:
652 questionnaires
- Company management / entrepreneur:
311 questionnaires

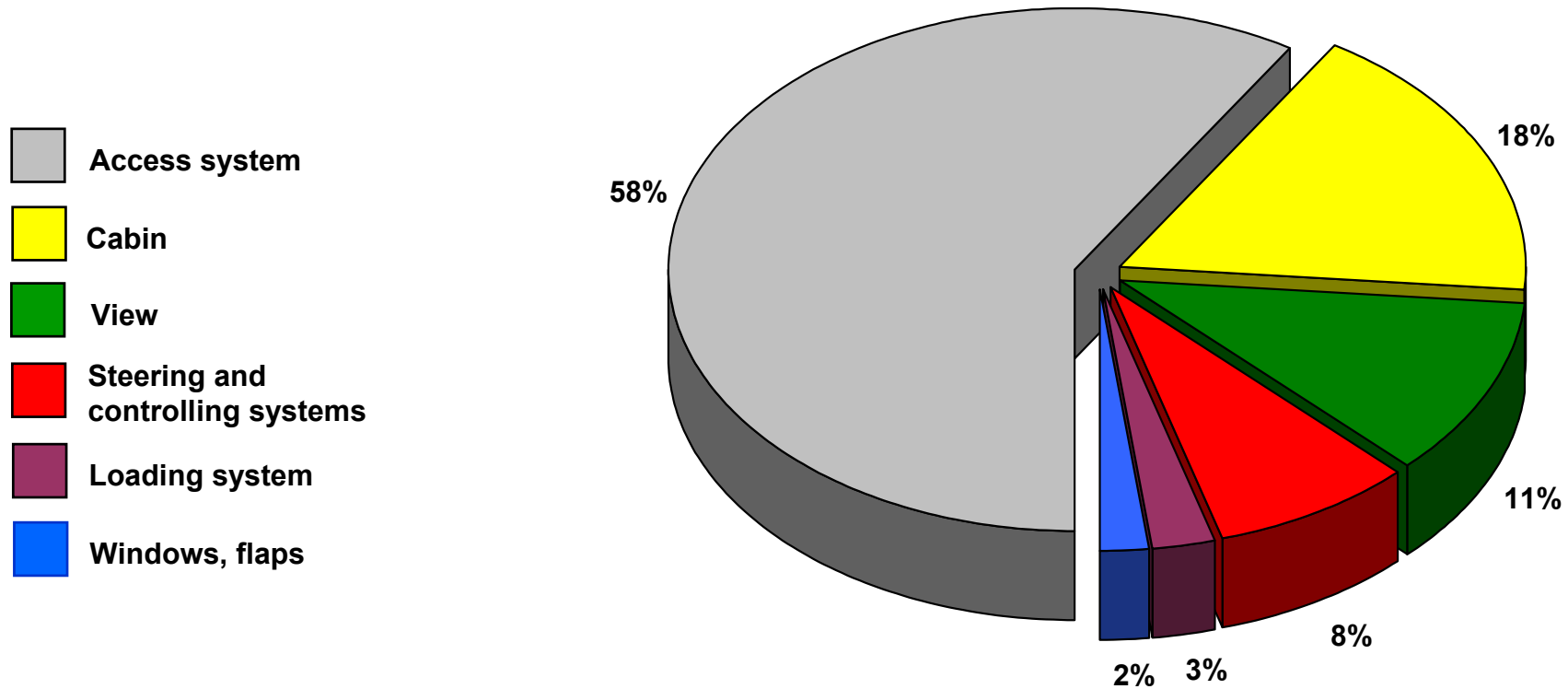
**Distribution of answers
(Company management / staff)**



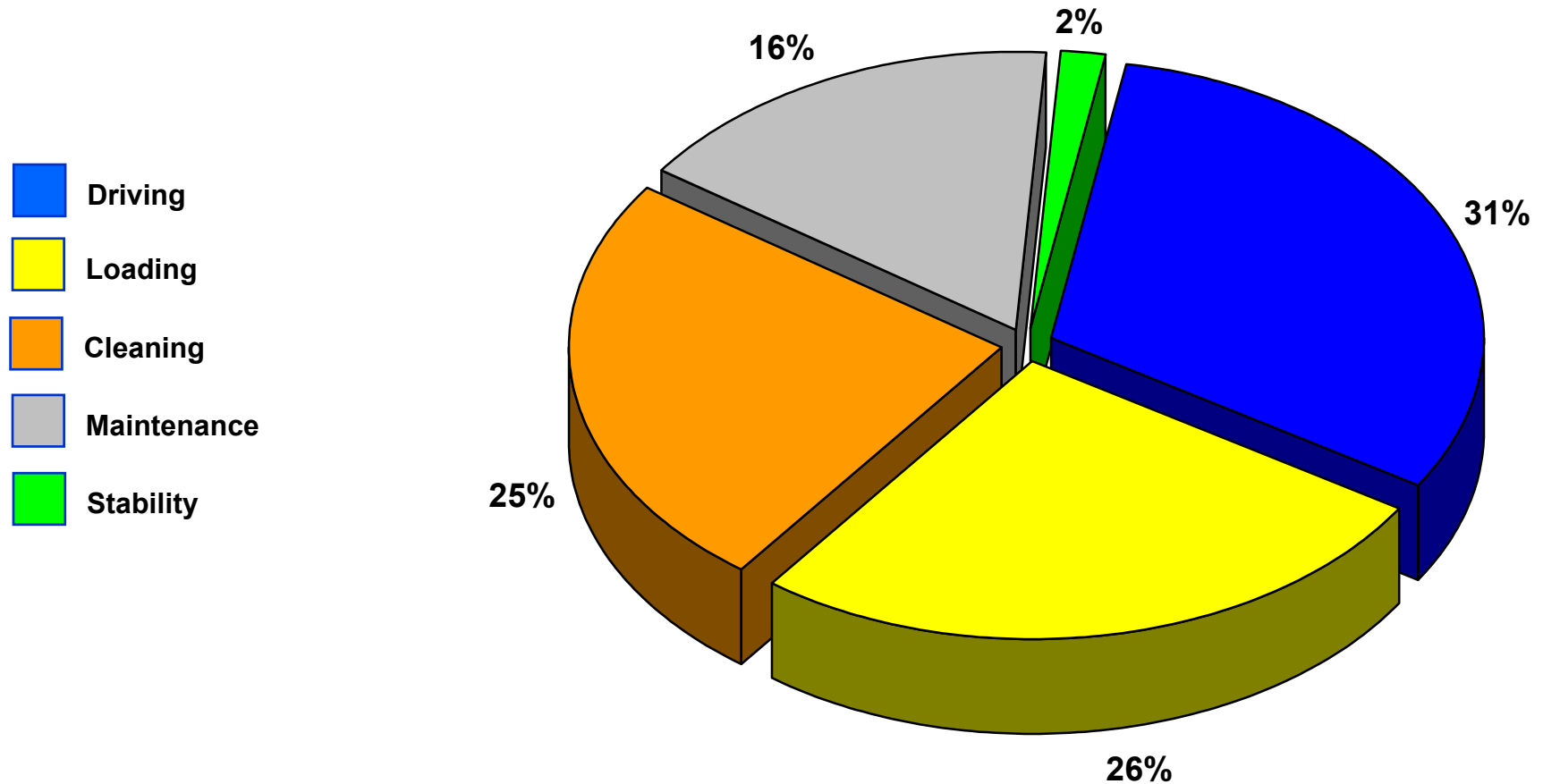
Accidents according to equipment



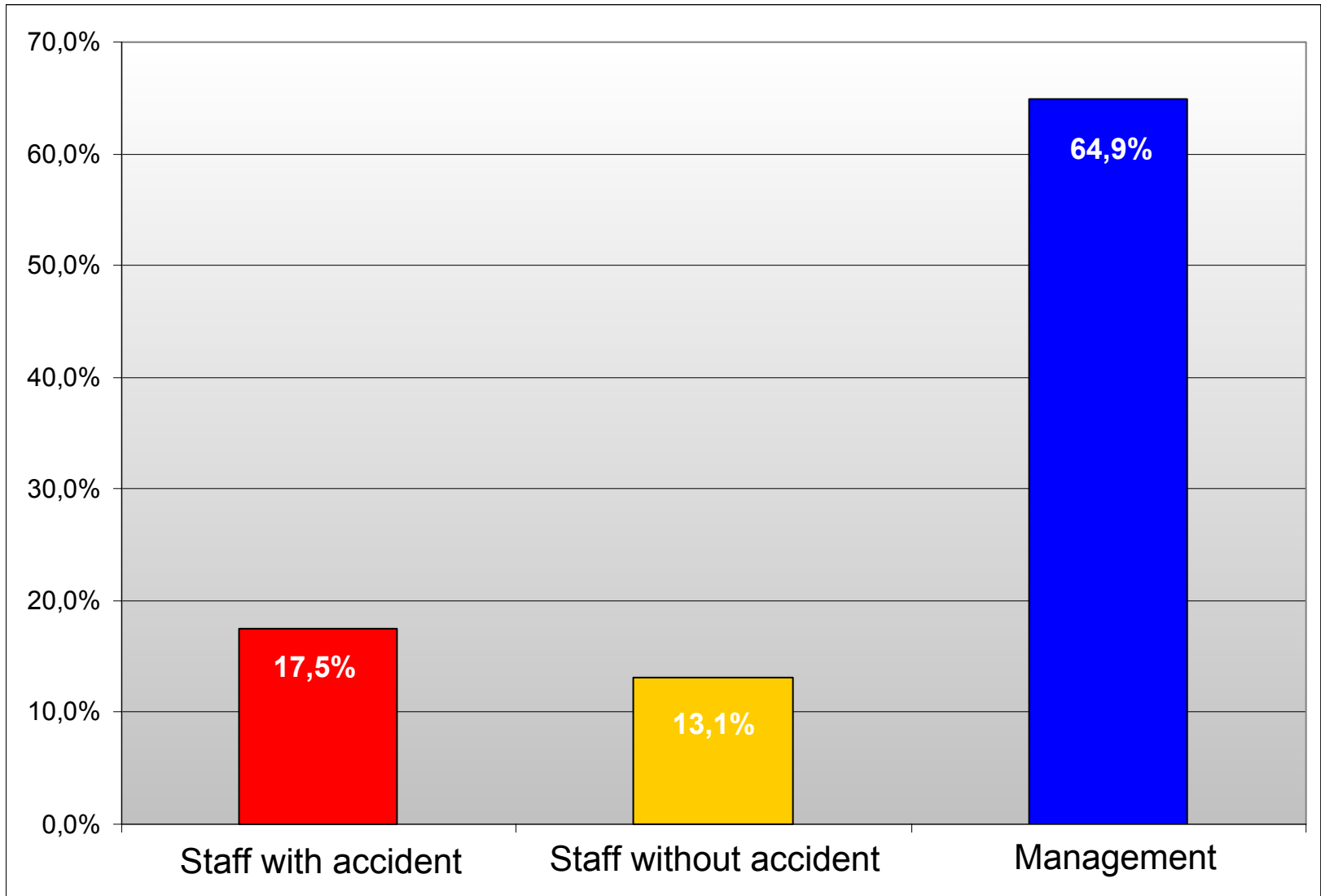
Design-related accidents



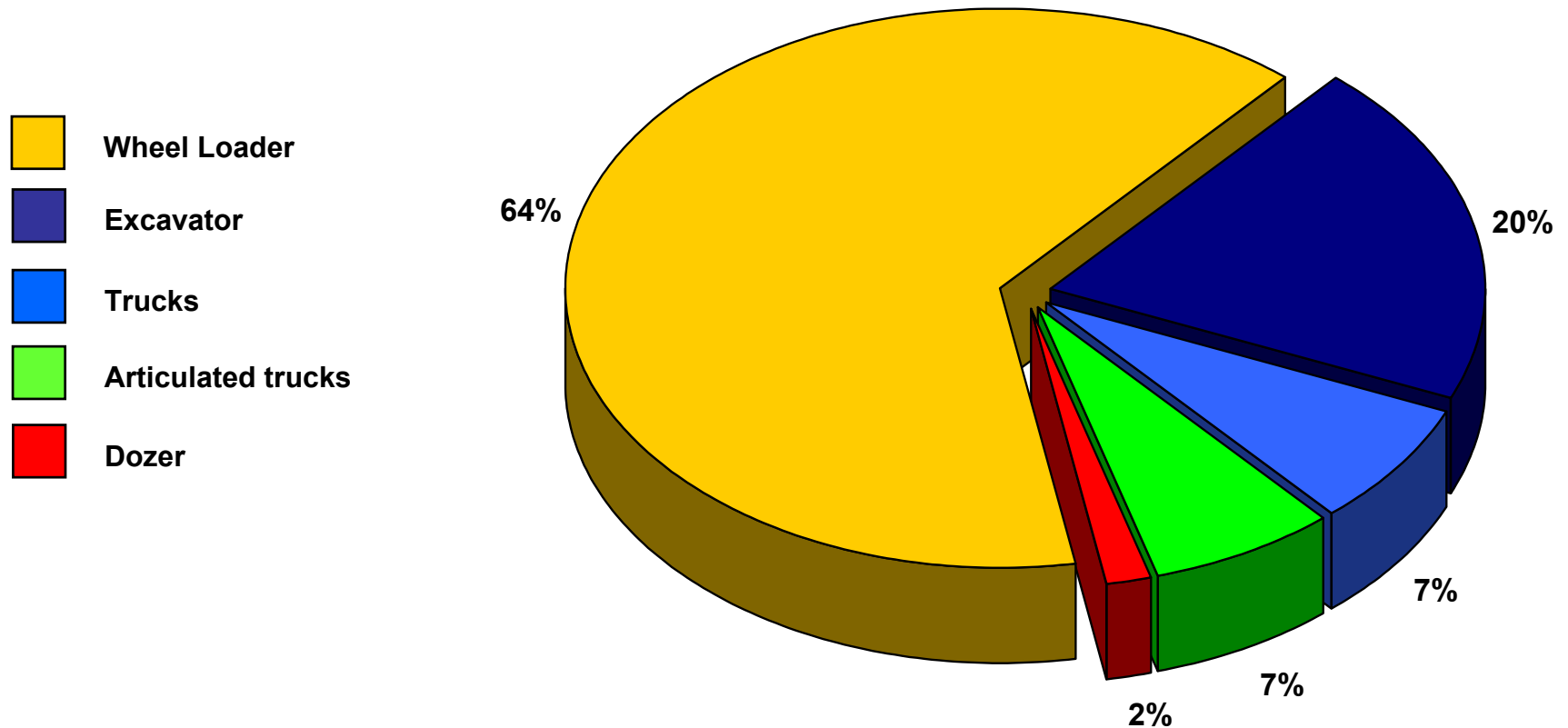
Operational accidents



Proportion of suggestions of improvement



Proportion of suggestions of improvement relating to equipment



Summary and outlook

- The results of the evaluation and analysis of the accidents and the results of the survey show the same basic tendency
- The design-related accidents occur 1.7 times more often than the operational accidents
- About 80% of the accidents are associated with loading equipment
- The severe accidents are associated with this equipment as well
- Most of the accidents are linked to the use of wheel loaders
- Most of the suggestions for improvement are handed in for loading equipment
- Most of the construction-conditioned accidents are caused by the access systems



Summary and outlook

- Construction-conditioned accidents often occur in connection with maintenance and cleaning tasks
- Urgent optimization of the construction of loading equipment in the areas of: access system, visibility conditions, dimension of the cabin
- **Involvement of the manufacturers of the equipment into the optimization process**
- **The target of the process is the optimization of the equipment!**

