

SAFETY FOR EVERYONE

1 Case metadata

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2 Organisations involved

Otis lift d.o.o.

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3 Description of the case

3.1 Introduction

Otis elevators and escalators affect the lives of people in more than 200 countries of the world. They are both global and local, serving the needs of customers wherever they live and do business. Here's an overview of the size and scope of the Otis business. Otis has approximately 61,000 employees, 53,000 of them outside the United States, and they offer products in more than 200 countries and territories.

Otis lift d.o.o. is part of a multinational company. The main activities in Otis lift d.o.o. are:

- Selling elevators and escalators;
- Maintenance of elevators and escalators.

The main values of Otis lift d.o.o. are: **safety, internal controls and ethics.**

3.2 Aims

The main task of the project was to start at the bottom of the pyramid and gradually build a complete safety system and culture for all stakeholders (mainly employees, customers, subcontractors and suppliers).

To achieve this, Otis lift d.o.o. had to:

- Improve awareness among employees about the importance of safety;
- Improve employees' safety skills;
- Improve employees involvement in the safety decision-making process;
- Check the progress of the implementation of activities;
- Improve overall safety;
- Improve awareness of safety among other stakeholders.

3.3 *What was done, and how?*

3.3.1 Analysis of current situation

To identify the key problems, they have completed an in depth analysis including:

- An in depth interview with the management;
- In depth interviews with all employees;
- Observations of employees' actual behaviour in the field;
- An analysis of scores and other safety related data;
- A study of the best practices.

Based on the analysis they conducted a risk assessment. The result of the risk assessment were 6 key problems that the company had to address:

- Lack of safety skills: based on the Annual accreditation and Hazard scan training, they identified that the employees (in the maintenance) do not have the skills to recognize the basic hazards and control them.
- The safety awareness was not high: because of the increasing pressure of markets and the drive for financial results, safety is sometimes compromised. They try to ensure that safety is never compromised.
- Decrease of stress: employees regarded safety related procedures and rules as additional cause of stress. The company wanted to increase the awareness that safety is as important as any other business result. Working efficiently means working safely. They introduced training on stress management for employees.
- An ineffective implementation of safety activities: in the past the supervisors did not check what is going on in the field and in the offices, if the activities and ideas were being effectively implemented.
- A lack of an appropriate learning environment for safety: as other things safety has to be learned. In Otis lift d.o.o. was not very good in diffusing knowledge of safety to others.
- A hazardous work environment (construction sites etc): Because the company has little influence on the actual job sites (subcontractors in construction sites; not owning the building in which elevators are installed), they cannot provide 100% protection for their employees. They need to be provided with the necessary skills to notice different risks at the working site, the tools for the reporting of their observations to the management and the tools for an efficient action.

3.3.2 Project activities

For each task they implemented a different solution, leading together to the ultimate goal of **Safety culture for all**.

3.3.2.1 Rules

Employees wanted to have a clear communication process regarding the basic safety rules. Otis lift d.o.o. has therefore established common rules and communicated them to everyone. They also implemented the Cardinal rules with zero tolerance for field workers as well as management.

3.3.2.2 Raising awareness of importance of general safety

SMS messages:

Rules are quick to forget if you do not refresh them. Weekly SMS messages are therefore sent to every employee in the field about important safety rules and procedures. Employees in the offices receive monthly e-mails instead of SMS's.

Screening of a movie on the topic of safety:

Annual screening of a movie about the importance of safety entitled: Perspective on Safety (obligatory for every employee). The purpose of the movie is to raise the awareness among employees that accidents at work can have serious consequences not only for them and the company – but also for their colleagues, families and friends.

Safety Campaigns:

They wanted the employees to have information on different safety topics, therefore they implemented regular quarterly campaigns on safety issues (example: Safe driving; Control of hazardous substances; Work on heights etc.).

Memory Cards:

The company wanted each employee to have some sort of short check list, where they could quickly recollect the basic rules before they start working on a new site. They developed memory cards for employees: Cardinal rules; Job hazard analysis and identification of risk; Safe driving; How to respond in safety dilemmas etc.

3.3.2.3 Improvement of the safety skills:

Quarterly Safety Trainings:

The employees requested more user friendly and interactive training sessions. Considering the average level of employees' education and understanding of the Slovene language (several of them are migrant workers) they developed more user friendly trainings (by using pictures and pictograms) in cooperation with the employees. The element of interactivity has also been successfully introduced in order to give the employees the possibility to actually participate in the discussion (and not just listen to the lecturer). The employees wanted the training sessions to be more frequent. Therefore Otis now organises a one day training sessions in every quarter of a year. These sessions are obligatory for all employees and all the employees employed by a subcontractor. Every year there is one training session on the Hazard scan training which represents the basic training for any job hazard analysis. Other training topics are defined in consultation with the employees taking into account their needs and suggestions.

CASE STUDIES

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OTIS

You are looking for [1] Major hazard(s)

Situation: Employee moving car on inspection.

Hazard Scan

Service / Repair / Escalator

Hazard Type:

- 1 Caught in or between moving objects
- 2 Contact with a harmful energy source
- 3 Struck by a moving object or hit an object
- 4 Slip, trip or fall
- 5 Over exertion/training while doing a task
- 6 Exposure to sharp edges, harmful substances or conditions



Time up.....

Next

Slide # 1

Otis lift d.o.o.

Figure 1. Example of slide from presentation

OTIS HAZARDscan

IDENTIFYING THE HAZARDS

most common hazards causing incidents

In order to identify hazards in an organised fashion, they have been grouped into six categories.

As part of the Hazard Scan training you will be required to identify the hazards and the categories they fall under.

The most common hazards causing incidents are:

- caught in or between moving objects
- contact with a harmful energy source
- struck by a moving object or hit an object
- slip, trip or fall
- over exertion/training while doing a task
- exposure to sharp edges, harmful substances or conditions

Please read the following information so that you have a clear understanding of the classifications:

HAZARDscan MOST COMMON HAZARDS CAUSING INCIDENTS

3 struck by a moving object or hit an object

These hazards involve objects in motion or people in motion, such as being struck by a moving vehicle, component weight or material falling on a person.

Examples of these hazards are:

- Striking a person vehicle or with tools
- Unsecured components
- Striking on the side of a car top moving off
- Impacted side apron - operator side
- Impacted or badly placed handrail

4 slip, trip or fall

A person can slip, trip or fall on the surface of a travel deck.

Examples of these hazards are:

- Slippery floor
- Unstable work platform
- Unstable stairs
- Loose work

5 over exertion/training while doing a task

A person can over exert or strain while doing a task, or performing an abnormal posture for an extended period.

Examples of these hazards are:

- Lifting, pushing or pulling
- Repetitive situations
- Over exertion in repetitive work
- Over exertion or unstable ground

6 exposure to sharp edges, harmful substances or conditions

A person can be exposed to harmful substances or conditions. These may occur over a short or long term period or suddenly as in the case of falls.

Examples of these hazards are:

- Harmful substances
- Harmful conditions
- Sharp edges
- Unsecured sharp edges
- Strain injuries
- Loose work items
- Exposure to sharp edges
- Exposure to sharp tools

Figure 2. Example of brochure with Job hazard analysis

First Aid Trainings:

Otis lift d.o.o. has set the goal that all employees finish a comprehensive First aid training (provided by an external certificated institution) by 2012. The First aid training was obligatory for their subcontractor's employees as well.

Safety at Driving Courses:

The employees have the access to the training courses in safe driving (provided by an external certificated institution).

3.3.2.4 Improvements in employees' involvement in safety decision-making process:

Process of Near hit reporting:

With the process of near hit the employees take a proactive stand on how to reduce the risks while performing maintenance tasks. Every employee has to submit at least one Near hit report per year and take a proactive stand on the safety issues.



Every one.
Every job.
Every day.

Near Hit Report Form

☐ Service
☐ Repair
☐ Construction
☐ Modernisation
☐ Staff

Site Address: _____

Date of Incident: _____ Time of Incident: _____

Branch Location: ☐ Ljubljana ☐ Maribor

Name, Branch and Phone Number of person involved: _____
(Optional if No Injury was incurred but if injury incurred, must be reported to Field Manager and an AR1 Completed)

Name, Branch & Phone Number of Field Manager: _____

Location on Site: ☐ Machine Room ☐ Machine Room Access ☐ Top of Car
☐ Pit ☐ Pit Access ☐ Landing
☐ Building Access ☐ Other _____

Brief Description of Unsafe Act / Condition: _____

What actions have been implemented / completed to resolve the issue locally.

Is further action required: ☐ Yes ☐ No IF YES – What do you think is required? _____

Do you want feedback on the closure of this near hit? ☐ Yes ☐ No IF YES please note your employee number / contact details here: _____

Product Type: ☐ Traction ☐ Hydraulic ☐ Escalator ☐ Other _____

Unit Number and/or Contract Number _____

Unit Type _____ Year Installed _____

Component Type: ☐ Controller ☐ Machine ☐ Selector ☐ Doors ☐ Entrance
☐ Pit Equipment ☐ Car ☐ Shaft
☐ Other _____

Completed By (if different from above): _____ Date _____
(Please include name & phone number)
Fax or e-mail this form to EH&S Department Fax No XXXXXXXX or e-mail XXXXXXXX

Figure 3. Near hit report form

Annual quarterly meetings with employees on topic of safety

The employees demanded to be informed about the issues and new safety procedures (especially detailed information on the accidents at work etc). So, every quarter of a year the management and

the employees hold a meeting where they jointly discuss different aspects of safety and health at work.

Learn & Live Volume 2010 Issue 4

Learn & Live
Environment, Health & Safety

Otis World Headquarters EH&S Bulletin

Subcontractor suffers fatal injuries when he falls down hoistway

On April 7, 2010, in Mumbai, India an installation subcontractor mechanic suffered fatal injuries when he fell 21 floors down the hoistway.

Two subcontractors were completing the final items on an installation unit. The team was on the car top at the top floor (floor 22) with the car on inspection control. The lead subcontractor wanted to do some work on floor 21 (the door unlocking device for floor 21 was not installed) so they positioned the car half way between floors 21 and 22. He got off the car top and went to floor 21 and instructed his helper to climb into the car and open the floor 21 landing door. After the helper had opened the landing door of floor 21 from inside the car he was instructed to climb out of the car onto floor 22 and bring the tools down from car top to floor 21. The helper stated when he was at the car top he saw that his colleague had fully opened the landing door and was standing near to the open landing. He then heard a loud noise.

The lead subcontractor had fallen down the hoistway and he was found in the elevator pit.



Gap between the landing door sill and the bottom of the car apron was 1050 mm

ALL EMPLOYEES ARE REMINDED TO:

- ALWAYS** assure protection from falling where a fall hazard exists.

This bulletin is part of ongoing safety communications issued by Otis World Headquarters.
Please share this news with everyone who can benefit from the information.

Figure 4. Example of on-going safety communications by bulletin

Decrease stress with regular off site activities

Otis lift d.o.o. organises weekly sport activities in the gym for all employees and sport games every quarter of a year.

3.3.2.5 Improvements in practical implementation of safety rules

Previous supervisors and managers never visited working sites on a regular basis in order to check if activities and procedures were actually implemented. The new system requires that every manager and supervisor has to go to the field and check if employees are implementing safety rules. This system also provides the opportunity for employees to raise particular safety questions on the spot while the management gets a better understanding of the safety problems and risks concerning maintenance.

3.3.2.6 New Job hazard analysis forms for different groups of employees

Different groups of employees carry out different tasks. In order to take all differences into account two forms of Job hazard analysis have been introduced:

Service mechanics (for maintenance)

Service mechanics complained that the Job hazard analysis form is time consuming and unpractical. Therefore the management and the employees discussed the issue and came up with a new more user friendly form. Job hazard analysis can now be done more quickly, because mechanics just have to cross the relevant hazards and measures taken for their elimination or control. Job Hazard Analysis has to be signed by the employee and checked by his supervisors. A copy of the form is also sent to the customer.

Construction mechanics

Construction mechanics usually spend a longer period of time on a certain working site. Therefore they still use the old Job hazard analysis forms and they actually have to write a job hazard analysis. They have to hand in the Job hazard analysis form to their supervisors every week for each construction site they worked on. The Job hazard analysis is signed by the employees and checked by their supervisors.

3.3.2.7 Safety as part of individual incentive:

Rewards for mechanics

The employees can get rewards for outstanding achievements in the field of different safety criteria. Rewards are given only for team achievements. Therefore only if all members of a working team show outstanding results in safe working – the team is entitled to the reward. Prizes are usually tickets for shows, swimming etc. With team rewards they try to make good use of peer pressure. Namely, the Annual safety surveys and statistical analysis showed that peer pressure and support have the biggest influence on safety behaviour of the employees.

Example:

Service and NON mechanics are divided in four groups:

- NON mechanics: XXXXX
- Service mechanics: XXXXX
- Service mechanics Ljubljana: XXXXX
- Service mechanics other: XXX

A group of employees receives a reward if they achieve:

- 100% compliance with the Fatality prevention audit on the respective scope of activities (all the mechanics who work together on a certain jobsite have to have 100% compliance) in a given year, but no score must be below 80% in the quarter of the reward.

	Q1	Q2	Q3	Q4
Employee 1	100	100	83	83
Employee 2	83	83	100	100
Employee 3	90	83	90	100

This group receives a reward in Q4.

	Q1	Q2	Q3	Q4
Employee 1	100	100	83	83
Employee 2	100	70	100	100
Employee 3	90	100	90	100

This group does not receive a reward in Q2 (because of score below 80), but in Q3.

The reward is a team award for group activities. Example: carting, paintball etc. If the group achieves 100% more than once a year, they are up for more rewards.

Near hit reporting

The employees were divided in two groups:

- NON mechanics;
- Service mechanics.

Each group has a supervisor, who is responsible to facilitate Near hit reporting.

A target for each group was set:

- NON mechanics group: one near hit report per mechanic (4) + supervisor (2) + subcontractor (1), together 7 near hit reports
- Service mechanics group: one near hit report per mechanic + supervisor (14 near hit reports).

When the target is achieved by a group, they receive a “group award” that they must use together: for example a team dinner, a one day trip to Venice, spa etc.

After the target is achieved, another, more ambitious target is set. There is no time limit, so one group can achieve multiple rewards in one year (but is really unlikely) or just one award in a few years.

3.3.2.8 Communication with stakeholders

Involving customers in safety culture

Every year Otis lift d.o.o. sends a safety letter to the customers, where they emphasize why safety is important and what they can do to improve safety of their elevators (for example access to the machine room etc.).

Subcontractors and suppliers

Subcontractors have the same obligations as their employees regarding safety in the area of training, regular control and use of safety tools. Suppliers are selected and chosen among others on safety records as well; especially in the area of equipment safety performance is the key criteria for the selection.

3.4 What was achieved?

Based on records so far, the project is a success. Facts:

- **Zero accident or injuries for the employees and subcontractors since 2004;**
- **Improved safety skills:** the employees are better trained to identify, notice and control or even eliminate hazardous conditions (accreditation test scores);
- **Better team work and communication between the management and employees** (results of employee survey);
- **Lower absenteeism of office workers** (data on working hours for 2009 and 2010)
- **Better scores on intercompany external audit on safety** (part of an annual process done by all branches of Otis, which is a multinational company);
- **More frequent Near hit reports:** number of reports submitted by the employees has increased from 14 in 2009 to 44 in 2010.

3.5 Success factors

The following factors contribute the most to the success of the project:

- Employees' involvement and dedication: employees dedicated their time, effort and ideas to improve their safety and safety of their colleagues.
- Management team: dedication and behaviour of the management that safety is the priority in doing business.
- Clear communication of safety importance: safety messages (SMSs, cards), quarterly meetings, discussions on safety.
- Inclusion of safety performance in employees' appraisal: what gets measured gets done. Good safety records are rewarded, which shows that safety does pay off (in monetary terms and in rewards of in kind).
- Team work of employees: willingness of all employees to embrace and work together to achieve safety goals.

Above all, the key success factors have been:

- Communication with employees: clear and regular communication of the management with the employees and the employees among themselves.

Trainings: quarterly trainings in safety skills (general and specific topics).

3.6 Further information

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3.7 Transferability

A small company with only 27 employees has managed to introduce innovative solutions in work organization and training to produce great results.

The present case study may be an example to many small companies where maintenance is part of the business process. The companies can use the form, with some modifications, for the near hit reporting and the transfer system for reporting. A good practice on individual incentive with rewards for the employees and the communication with employees and customers, subcontractors and suppliers, can be also transferred to many companies.

4 References, resources:

- <http://www.otisworldwide.com>
- Drašček, M., Dobra praksa na področju varnosti in zdravja pri delu, Delo in varnost, št.1, str 39-41, ZVD Zavod za varstvo pri delu d.d., Ljubljana, 2011