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# Improving the Safety Mindset of DHL Express

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Yritysmaailmassa työturvallisuus on toiminnan keskiössä ja työturvallisuus kuuluu kaikille. Monet kuitenkin luulevat virheellisesti, ettei työturvallisuus kuulu heille, joten heidän ei tarvitse ilmoittaa riskitekijöistä tai läheltä piti -tilanteista. Tämän opinnäytetyön aiheena on tarkastella DHL Expressillä vallitsevaa työturvallisuuskulttuuria, miten työntekijät kokevat työturvallisuuden vaikuttavan heihin ja omaan työhönsä sekä miten he kokevat työturvallisuuskulttuurin olevan osa heidän työtään. Tutkimuksessa kerätyn datan avulla tulkitaan vallitsevaa yleistä työturvallisuuskulttuuria, sen maturiteettiä ja pohditaan, miten sitä voitaisiin nostaa korkeammalle tasolle.

Työn teoreettinen osa käsittelee työturvallisuuskulttuurin keskeisiä käsitteitä ja käytänteitä kuten Bradley Curve, Scheinin turvallisuuskulttuurin 3 eri tasoa, Safety I & II metodologioita sekä human factors -tekijöitä.

Empiirisessä osuudessa toteutettiin monivalintakysely DHLn työntekijöille. Kyselystä saatujen tulosten perusteella tehtiin johtopäätöksiä vallitsevasta työturvallisuuskulttuurista, miten sitä voitaisiin parantaa ja kehittää sen kypsyyttä. Työssä on haastateltu kahta eri asiantuntijaa safety mindsetistä, sekä Safety II teoriasta. Safety II on yritykselle ajankohtaista, kun halutaan siirtyä työturvallisuuden maturiteetissa korkeimmille tasoille.

DHL Expressillä vallitsevassa työturvallisuuskulttuurissa on monia hyviä elementtejä. Työntekijät tietävät, miten heidän pitää toimia eri tilanteissa, koulutus on laajaa ja tapahtumia seurataan ja raportoidaan. Työssä löydettiin useita mahdollisia jatkokehittämisen kohteita työturvallisuuskulttuurin parantamiseksi DHLllä.

Avainsanat: safety mindset, safety I & safety II, turvallisuuskulttuuri ja työturvallisuuskulttuuri

# Improving the Safety Mindset of DHL Express

In business world workplace safety is at the centre or action and workplace safety is everyone's responsibility. Many people still believe falsely that workplace safety is not their responsibility, so they don't have to report safety hazards or near-miss incidents. The topic of his thesis is to observe the overall workplace safety culture at DHL Express, how the employees view workplace safety affecting them and their work as well as how they experience workplace safety culture being part of their job. With the data gathered from the research the workplace safety culture will be analysed and interpreted, and the possibility of getting to a higher level in the safety maturity level.

The thesis theoretical part deals with the core safety terms and customs such as Bradley Curve, Schein's 3 levels of safety, Safety-I & Safety-II methodologies and human factors.

The empirical part was implemented as doing a multiple-choice questionnaire for the employees of DHL. With the results gotten from the questionnaire conclusions were made in regards of the prevalent workplace safety culture, how it could be improved and its maturity. In this thesis two experts in the field of workplace safety were interview about safety mindset as well as about the Safety-II theory. Safety-II is relevant to the companies, when they want to move to the highest level in workplace safety maturity.

DHL Express has many good points in the workplace safety culture dominant there. The employees know how they need to act in different situations, the safety training is broad, and the safety events are being monitored and reported. In this thesis many possible further development plans for improving the workplace safety culture were found at DHL.

Keywords: safety mindset, Safety I & Safety II, safety culture, workplace safety

# Table of Contents

**Abbreviations and terms:**

LTI        Lost time incident

KPI        Key performance indicators

ANSI       The American National Standard Institute

ASSE       American Society of Safety Engineers

IAEA       The international atomic energy agency

HF         Human factors

NDA        Non-Disclosure Agreement

LTIFR      Lost time incident frequency rate

LTIF       Lost time incident frequency

# 1 Introduction

The topic of safety always comes up when discussing any working field or environment. Having a safe working environment and all the personnel understanding the safety needs and adhering to those safety regulations is crucial in any and every single workplace to ensure that all employees are safe and feel safe in their workplaces. In regards for improving the safety of any workplace one very important aspect of it is to have all the employees on board with safety regulations and rules, not only to follow and understand them, but as well as how they subconscious view these safety rules and what is everyone's own safety mindset at their everyday work.

Having a safe work environment does not work if the employees don't follow the safety rules and regulations at all. Having a keen eye and mindset for safety and holding true to even in smaller things regarding workplace safety is important. This all makes a big difference in how everyone treats and acts in terms of safe working and making the workplace safer with their own actions and ideology. This all affects the safety culture overall and safe work environment, not only for yourself but everyone around you. When your own safety mindset is well adjusted, that can lead to other employee's safety culture and safety actions improving further also. Everyone's safety mindset is more or less connected to the company's overall safety mindset status and thus the entire safety maturity in a company will improve one employee at a time.

This thesis will be looking that in what ways the employee's safety mindset affects safety outcomes like KPI's (Key performance indicator), LTI's (lost time incident) and safety observations. This could thus lead to reduced workplace accidents. Most importantly, what are the means to raise the safety mindset for all the employees to the highest level and make them more committed to the safety culture in their everyday work. Relevant data such as queries from the employees, how they regard safety, analyzing the already existing data regarding workplace accidents and previous safety incidents are utilized alongside the theoretical part. These tools help to see what can be done perhaps in improving the mindset of the employees about safety culture. The topic of workplace safety or occupational safety relating to the mindset will be covered. Not "security" which is then more relating to the safety of the employees from preventing outside personnel entering the workplace and keeping them safe from outside harm etc.

## 2 Measuring Safety

When measuring workplace safety, it can be divided into 2 different measurements: reactive and proactive. Normally safety culture and occupational safety are measured with reactive measurements. These measurements talk about the lack of safety and observing safety incidents that take place. Workplace safety normally has a certain target goal in a company aka. "Zero accidents policy" or trying to get below certain LTI level what the company tries achieving them. Safety numbers and figures can be measured then against some of these pre-set and determined levels of workplace safety. In order to have the best possible safety culture and level one should use proactive measurements together with reactive measurements. Proactive measurements are things like near miss reports, safety trainings, risk assessments, budgeting for safety and resource allocation. With proactive measurements safety risks and hazards can be pre-emptively mitigated and the lack of accidents can be noted down to being a systematic operating model. (Tikander 2013,6.)

### 2.1 Risk Assessment Matrix

Risk assessment or risk assessment matrix is a tool which can be used to note down the potential risks in a company, the likelihood of said risk occurring and the potential damage/severity of said risk.

**Severity**

| | Negligible | Minor | Moderate | Significant | Severe |
|---|---|---|---|---|---|
| **Very Likely** | Low Med | Medium | Med Hi | High | High |
| **Likely** | Low | Low Med | Medium | Med Hi | High |
| **Possible** | Low | Low Med | Medium | Med Hi | Med Hi |
| **Unlikely** | Low | Low Med | Low Med | Medium | Med Hi |
| **Very Unlikely** | Low | Low | Low Med | Medium | Medium |

Risk Matrix Example                    Likelihood X Severity = Risk Level

(Picture 1. Riskpal, risk assessment matrix 2024)

The 3 main points in risk assessment is to: identifying the potential risks and dangers, secondly analysing the potential damages, harms and relevance done to employees involved in said risk and lastly preventing, removing, or at least minimizing said risk.

The risk assessment matrix has 2 rows, the likelihood of the risk happening in said work environment and the severity of it in case it will happen. Negligible risk can be something like small cuts and bruises that don't cause any actual actions and work can be resumed normally, whereas on the other end of the spectrum severe severity can mean permanent disability and the inability to resume working for a very long period of time or even death. The likelihood then has the measurements if the risk happens almost never and is extremely unlikely case like an air ventilation shaft dropping from the ceiling or a flagpole falling over a car in the parking lot versus the likelihood being very likely meaning that it happens multiple times during the day or even an hour.

Normally with risk assessment matrix the severity gives certain number of points or "score" for the potential risk and then depending on the likelihood of the risk, the number is then multiplied. Then the potential risks that meet certain point score, at a certain threshold are identified as major and large risks that need to be dealt with in order to reduce the risk score. Also, as seen on the risk assessment matrix in picture 2, all of the potential risks that are towards the upper right corner of the matrix aka. risks that have high likelihood of

happening and sever severity needs to be addressed immediately. After the risk assessment has been done, if the risk has high enough score/severity plus likelihood some prevention methods should be implemented. Once said fixes are done a new risk assessment should be done for all of the potential risks again assessing the situation anew. At least the most sever risks should be checked again to see if the fix was sufficient to reduce the risk score or if some additional steps are needed to ensure safe working environment. (Työsuojelu 2024.)

## 2.2 DuPont Bradley Curve

The Bradley Curve is a graphical tool, helping to illustrate the potential relationship between the accidents and its culture in the company. With this tool it is possible to evaluate the current prevalent safety culture in the company as well what can be done to improve this situation. The Bradley Curve was developed in 1995 by a DuPont employee, Berlin Bradley. Originally, he collected theoretical ideas and plans into a matrix and from that further proving them to be correct with scientific evidence.
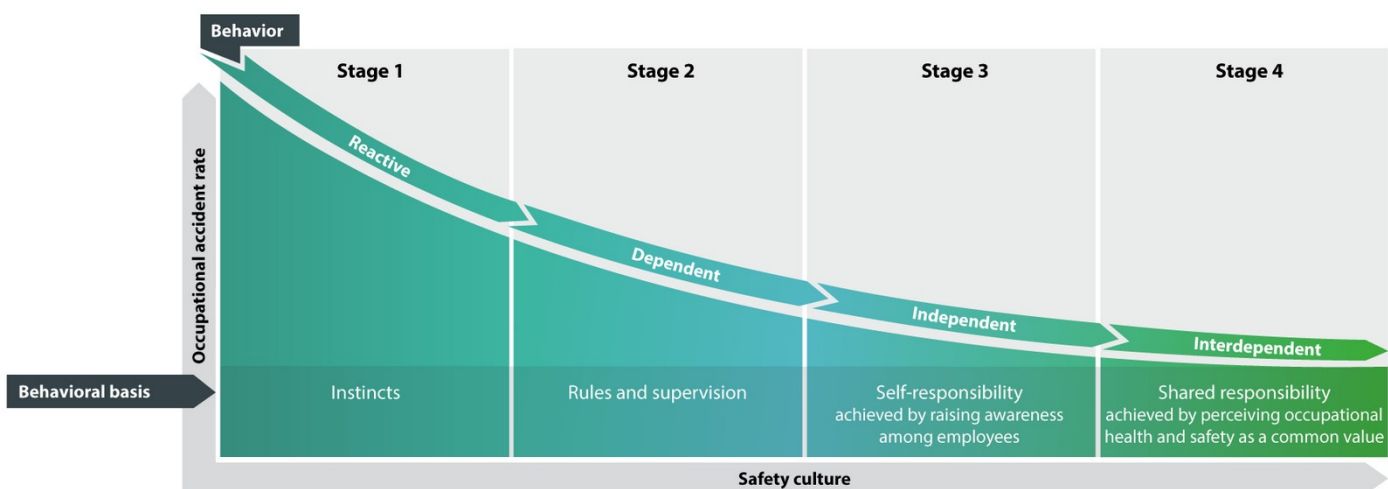


(Picture 2. Quentic 2020 Bradley Curve)

The Bradley Curve depicts normally four or five stages, depending on the users or which version of the Braley Curve is being used, of safety culture. The safety culture currently in a company, can be attributed into one of the four stages within the Bradley curve scale, depending how they employees act and think about their safety culture. With improvements and resources allocated into safety culture and safety mindset can it mature into further stages of the Bradley curve. At the lowest level accidents happen quite frequently in a company. Most of the employees neither the management does much to

prevent this nor do they care before something life threatening or major accident happens. On the other far spectrum of the scale accidents do not happen at all and all employees are very vigilant about their own safety as well as caring as much about their fellow colleagues and supervisors' safety as their own. The Bradley Curve can be based of one important key question: "What is the basis and foundation to prevent accidents in our workplace?" Is it purely based of natural instincts of every employee to stay safe, is it based on the rules and regulations of the workplace, is it based of the responsibility of the employees or shared responsibility of everyone?

On the first stage, it is purely of reactive occupational safety based on instinct alone, the employees have near zero situational awareness or safety concerns and almost all safety issues are seen as inevitable.

On the second stage of the scale, it is seen merely as dependent to the occupational safety based on rules and supervision. The employees do follow the rules and regulations set by management, but they hardly care for them and see them only as merely boundaries set by the supervisors and higher management.

On the third stage there can be seen some independent occupational safety based on employees' self-responsibility and them taking care of their own safety without the constant supervision by the management. They understand the safety issues and needs and see themselves also ways to improve upon their own safety culture and care at least for their safety and actions.

At the fourth/final stage there is a common shared feeling of responsibility which can be achieved by perceiving occupational health and safety as a common value. The employees not only care for their own actions and safety, but actively try to improve their colleagues' actions and their safety through safer means for everyone and everyone pursues continuous improvement on the workplace. (Jasiulewicz-Kaczmarek 2016.)

# 3 Workplace Safety and Safety Culture

To even begin talking about safety or safety culture, one must define what exactly means: "safety". Almost everyone knows what the word or term "safety" means. That you are safe, and out of harm's way. But some people or companies and different organizations define safety a bit different or have contradicting views what safety actually means. For the term itself one must differentiate the words: "safety" and "workplace safety" or "occupational safety". If one wants to develop and improve the safety culture inside an organization everyone in it needs to be on the same level and on the same basis of understanding what exactly safety means in this matter and context. It might seem insignificant to be this pedantic what safety truly means or focusing on getting everyone to understand what the organization means by "safety" or "safety culture". But after years of work on safety culture and among safety if an organization has a vague or unclear definitions of safety and multiple different angles to safety culture definitions, it complicates things immensely and thus the entire process to improve the safety culture and its potential growth is stumped by a lot. (Roughton, Crutchfield 2013, 78-82.)

The American National Standard Institute (ANSI) and American Society of Safety Engineers (ASSE) defines safety as "freedom from unacceptable risk" where they define the risk as "an estimate of the probability of a hazard-related incident or exposure occurring". Later they define hazard as "potential for harm". These definitions are in a way broad since they describe some of the risks deemed to be acceptable. This is true since some jobs or tasks have way larger risks as part of their duties like policemen or stunt drivers etc. Sometimes these risks are unavoidable partly due to the nature of the job but must be still done for the community or the community deems these risks acceptable for the general activity in order to achieve some goal associated with these dangerous jobs. (ANSI/ASSP Z590.3-2021 2011.)

Safety culture consists of different rules, regulations, notions and values between the employees, unions, organizations, and workplaces. It is an integral part of almost every single company's and business organizational culture, and it can be described in few different ways, depending on how you view safety culture. With safety culture it builds first from organizational culture itself first, which can be described in 3 main ways: firstly, the individual needs to be motivated enough by company/employer so that they are going to

be working towards the wished goal from said company or employer. Second is the main point in building a good working and social relationship between employees themselves which in turn motivates and improves further the working conditions for the employees if they have good work harmony between themselves. Finally, when the first 2 points are met the company can focus in improving on itself to create as efficient and effectively working environment as possible for maximum possible outcomes. If any organization wants to thrive and be successful, especially in the ever-growing competitive markets due to globalization and the easiness of internet sales and business every single company needs to start that it's safe and pleasant for their employees as working conditions. This in turn starts from having a good and well working organization culture. The employees being open in communication between each other as well as to their managers, being mindful of their own safety and in ideal situations their colleague's safety as well can all improve tremendously multiple aspects not only in the companies organizational and safety culture, but profits and inventory flows as well. (Martin 2006.)

Most often the leading cause for workplace incidents and accidents in such environments take place because the employees are not paying enough attention to given safety standards and other policies. These standards and procedures are established in the first place because the employees are self-sufficient enough in following safety concerns or being able to work safely without causing relevant safety issues.

To promote a good safety culture and improving said safety culture and how employees in a company view this should come down from the senior management onto team managers and from that point onward to all employees. With their commitment to safety, improving it, how to handle safety hazards and problems as well as continuous learning inside the organization can the entire safety culture further improve inside the company. This ensures for example the positive feedback from reporting safety issues and near miss cases instead of employees just downplaying these kinds of issues and not bringing them forward. Beyond just training the organization as a factor, individual learning plays a crucial role as well. When individuals train and learn more about safety and safety culture can this build a very crucial foundation in having a systematic safety culture in a company. (Biggs, Bigsdag, Roos, 2008, 5-9.)

Following the devastating safety violations and incidents caused at the 1986 Chernobyl accident is usually cited as the first public instance where the term: "safety culture" was

being used and was published. The international atomic energy agency (IAEA) even lists the main causes for the incident being the dominant culture at Chernobyl and emphasizes the faults at their culture and work safety actions being the reasons for the followed explosion in the powerplants reactor number four. Not only was the safety culture missing at Chernobyl, but it is cited that this same phenomenon can be seen through in Soviet Union at said time. How the operations and organizations around nuclear power functioned back then. Safety culture all in all was far too insufficient or nearly non-existing which the IAEA identified. Other factors for poor safety culture behaviour were that employees often questioned some of the decisions made by their superiors and did not follow set procedures, as well as their tendency to cut things short or violating the norms and customs that were set in place there. They had also turned off some of the critical alarm systems during some earlier tests and they merely believed self-indulgently in their technology and machinery to be able to produce energy, and not holding safety culture and its prevailing concepts in any regard whatsoever.

Following this very devastating and catastrophic accident on Chernobyl which affected a very large portion of the entire north-western Europe, and partially it's effects can be still seen to this day onwards, people all around the globe started to pay attention more to safety culture and safe working conditions by showing how large scale and immense the risks can be when basic safety precautions are ignore and safety culture is ignore completely. Even though this catastrophe happened in one of the highest technology and advanced production facility humans had created at that point, the initial root causes for this accident were not that high tech in the end. After the investigations by IAEA, it was deemed that it had been on very large parts merely human errors due to the fact that the facility had become "blind" towards their potential hazards and safety issues. Several investigations that had been concluded after the incident in Chernobyl have indeed pinpointed the culture itself as a major contributor in accident culture and why accidents happen. The following phenomenon can be observed as well on other large human led errors and incidents such as Kings Crossfire, Piper Alpha oil drilling explosion as well as Challenge and Columbia space shuttle accidents. (Antonsen 2016, 10-12.)

Edgar Schein describes that safety culture can be categorized in 3 different levels which can be used then to evaluate and evaluate the safety culture within some function.
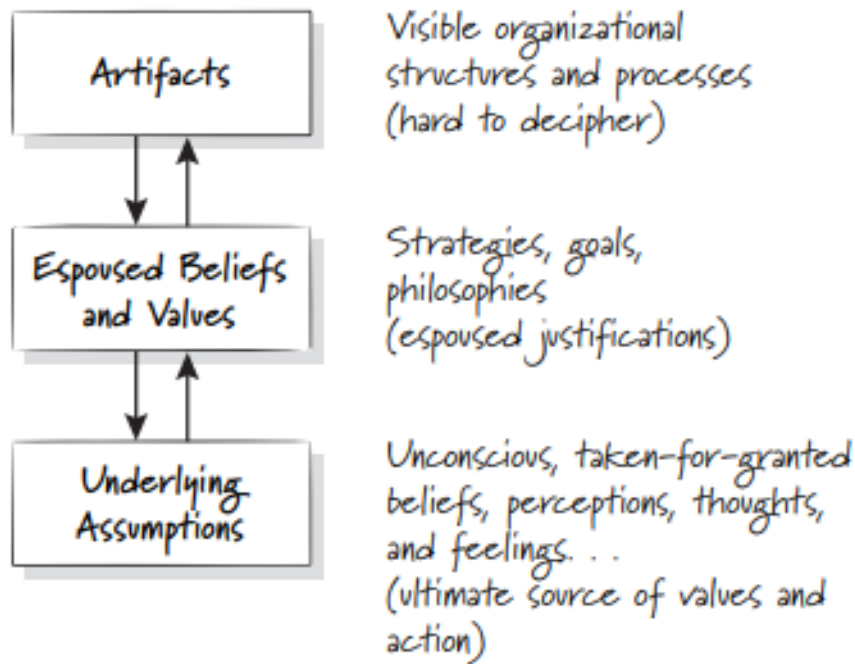
(picture 3: Schein, E.H. (2017) the three levels of culture,) Hoboken, New Jersey Wiley.)

Artifacts: The first level in the safety culture consists of the different artifacts. These are the visible parts inside said organization structure and on its different processes. These artifacts can be visible be observed when walking within the facilities of the company or in factory and so on. These can be also reviewable things within the organization. For example, the different equipment is counted within this level as well as the maintenance required for the equipment. Also, the working locations themselves are considered to be a part of this, such as the different work environments and their conditions, how good is the warning signs around the working locations, signs, safety instructions and guides, etc. The second level is the espoused values. This includes the different goals, strategies, policies, procedures, and other key philosophies that used within the company. These espoused values can manifest themselves visible in the form of certain safety slogans such as: "safety first", they can also be safety goals set by the management, certain safety statements and other commitments made by the company like reaching 0 accidents in its first quarter and so forth.

The Third and final level is the underlying assumptions and unspoken rules: This level itself is more of invisible level or not so tangible as the first two ones. But for safety culture to be completely adapted and matured into the company's everyday functions this level needs to be dealt with properly as well. These includes as the name suggest the

underlying assumptions that all the employees have on their minds and some "unwritten rules" that everyone more or less follows on everything that they do around the job. To get truly to the bottom of the third level of this safety culture, one must combine the first two levels and with their knowledge interview extensively the employees and observe their everyday working habits and manners as well as how they view safety all in all to get the full picture of the underlying assumptions that the employees might have. As on everything if you try to reach higher and higher on some maturity level it gets only harder, since getting the full picture how the employees view something in regards of safety culture might be near impossible. Safety and its importance can be said and established as an important factor in a company, but none of the employees accept or adapt to this truly. (Roughton, Crutchfield 2013, 25-28.)

## 3.1 Safety Mindset

A safety mindset is ultimately about being self-conscious about your own safety on your workplace and during your work process. Another just as important, if not even more important, factor in safety mindset is the collective thought of others and everyone's safety. For safety mindset there are few defining factors how it could be perceived and how it affects the working on any workplace.

Observation is one of the foremost aspects of safety mindset is paying attention at everyday tasks and at any job position is crucial. When staying alert to any possible workplace incidents, being aware of the possible hazards, keeping a close eye on colleagues' surroundings as well as to one's own can thus mitigate a large part of near miss situations. With precautionary observations and subsequent actions supporting the workplace safety culture can the company create a well-functioning safety environment and mindset for their employees. While concentrating and being focused on your current job task, it is crucial to have safe working conditions and work tasks. Not being mindful of your current task and being absent minded due to boredom, lack of sleep or other distractions even for a split second can cause major injuries or even death on worst case scenarios. Relevant tools and methods are also a key aspect in safety mindset, since lifting heavy objects or moving something relatively heavy without the necessary safety equipment or tools yourself or without a partner can leave you with permanent health issues and damages. Analysing and thinking your situation before actions is also important

part of every single work step. Before action a relevant thought process: "Is this safe? Is this procedure correct?" should be concluded. Even if some steps might slow the process down or seem banal, they should be still completed carefully and as well as the working instructions intend. Almost no accidents happen on their own or simply because of luck, or they can be at least mitigated greatly with correct and safe working procedures. Before also ending each task, it is just as important to observe that the task and tools were correctly disposed and taken care of for future safe working conditions. (Potter C, Potter D 2010.)

Once there has been built a foundation for a safety culture and other common procedures and safety regulations and have started to imprint safety mindset to all employees and they have started to partially at least to embrace the steps for good safety culture and safety mindset there are some further aspects to improve upon that. Through Leadership Commitment and Employee Involvement for leading the other employees and setting a good example in everything is important. It is also very crucial to have good safety policies and ultimately the safety behaviour it is up to the leadership team as well as team leaders/supervisors to follow through in all of the safety policies and being responsible themselves. If the leaderships' standards and ethics are correct and safety is on the right level can the leadership then start bringing the rest of the team also into this to follow suit. With methods like personal safety observations through walking around the different working stations/places can the supervisors and technically all employees perform workplace safety assessment to identify and spot potential workplace risks and other hazards. Supervisors also can get tremendous amount of information by simply talking with the employee on the floor level that see and interact with potential safety issues every single day on their daily tasks and workplace interactions. With these spotted hazards and information gathered from talks, reports and noticed issues can hazard prevention and control be performed and made sure that these issues won't happen in the future or realize further into deeper problems.

## 3.2 Safety Management

The position of safety manager might not be so crystal clear always in the organization. Even though the role has the title "manager" they most likely are not a classic "managers" as in normally with managers it is, rather than their responsibilities reaching a bit further

out. Quite often one of the core problems in workplace safety responsibilities and procedures is the uncertainty of roles and responsibilities tasked for these roles. For example, the safety manager must be able to not only lead his own safety organisation underneath them, but also on some levels be able to affect the entire staff at the company. This can create incoherence actions and responsibilities if it is not detailed well enough what are the responsibilities for the safety manager and other supervisors.

The main responsibilities in the organisation with different safety actions is to create a well-functioning safety culture. To create a strong and well-functioning safety culture does not happen easily nor overnight. Even more so if the corresponding knowhow and motivation for this is lacking it might be never achieved. Safety culture cannot be achieved by merely" ordering" or telling the employees what they need to do and pay attention to, It requires also interdisciplinary mindset and sufficient social skills to bring it forward to others. A basic requirement for safety culture is that the employees know what is expected of them, what they need to do, how they need to do it and most importantly why they need to do it. If any of these are lacking in the building of safety culture, it will halt and will only stay as a very surface level idea and principle.

The largest and one of the most important roles playing in this is the organizational upper management. In order to make the employees commit to the relevant workplace safety standards and procedures the upper management and supervisors need to have sufficient knowhow and information about the relevant workplace safety theories, as well as methods to teach and bring these theories live. That is also required to make sure that the implemented procedures are long lasting and well-functioning. (Puhakainen & Siponen 2010, 762.) One of the most crucial aspects and core competencies of safety manager is the sufficient social intelligence in order to bring these forward to others well enough. When building a safety culture in a company it is important to acknowledge that this competency can be trained and further improved and should be improved once the company evolves and continues to grow. (Syri 2020, 14.)

In order to expect something from the employees the upper management as well as the safety manger should show similar and good example. This can be a very simple matter, but it is extremely crucial, and often missing aspect. Due to the fact that the upper management and safety managers are missing core safety skills, nothing more can be

expected from the rest of the employees. Hence there is then the inability to continue growing as a company in the matter of safety culture or having better safety maturity.

When the attitudes towards safety are set and on the correct level this brings stability and long-lasting practices to the company. In order to change attitudes, it is important that the source where some new practice or theory comes from is trustworthy. According to Congruence theory humans believe something the best if it is coming from a source that is believed to be trustworthy. This is very important regarding the role of safety manager, if they say one thing and do another thing, and do not follow themselves the safety culture expectations and procedures at the company, how trustworthy is that and how can it be expected that anyone else would then follow them either? The guiding principle for the actions of the safety manager is the inner motivations of the person. It is crucial to note that if the person wants to be a successful safety manager they need to have the sufficient management motivation as well. If the supervisor or manager themselves are interested and into safety culture and building that, will that show and also affect the actions of their subordinates. (Aaltonen, Pitkänen & Ristikangas 2008, 183.)

When dealing with safety culture and workplace safety culture, attitudes play a crucial and important role in it. The attitudes include in themselves feelings, behaviour, and thoughts. With these 3 main components attitudes are very strongly linked to safety and safety culture. For example, a major accident in the family or happening to someone close by can affect the feelings of a person quite critically thus then to the attitudes of someone regarding safety culture. Thoughts of course relate to how important certain safety culture aspects the people view as or think how important they are, and behaviour relates to according to how someone acts then depending on their 2 previous parts of this aka. Thoughts and feelings. (Oedewald & Reiman 2008, 116.)

To have a proper safety culture one must have the employees and people understand, how workplace safety is in connection with all of the other work tasks and what it takes to change and to improve the prevalent safety culture. From the beginning it is very important to make the people understand that safety culture is extremely tight knitted to everything and anything relating to all other work and every single work task. It is also part of management, business – it is not separate thing, rather than being visible and part of everyday tasks always at all times. It is crucial to be aware that part of everyone's tasks and responsibilities it is also an important skill to be aware of your surroundings and job

steps so you can work safely.

(Tikander 2013, 21.)

According to the Confederation of Finnish Industries workplace safety model safety management is a part of the company's business leadership as well as part of the company's risk management. As part of safety management, the goal in all situations is to ensure the business' activity being continuous, all of the activities being safe and according to the relevant safety standards and procedures also in compliance with the relevant environmental safety standards and other legal concordance. (Elinkeinoelämän keskusliitto 2022.) With proper safety management it will have positive outcome to the quality of the work, the environment of the staff and employees as well as with well-planned safety management and workplace safety plan the company can act better according to unexpected events as well. (Hämäläinen & Lanne 2001)

Safety management should be well planned and prepared and have overall systematic approach to it. With proper safety management can possibly already existing safety hazards be mitigated and prevented, perform key precautionary actions in order to eliminate them and even remove existing safety hazards. Also, it is possible to mitigate the damages some accidents then might cause and best of all prevent as many as possible incidents from even happening. In systematic safety management the key factors are development and continuous improvement in regards of the workplace's occupational safety, its culture and for the health of everyone. In the development and continuous improvement that can include training the staff and bringing new measures into place that can point out new safety hazards and further pinpoint already existing one even better or some other ways to boost the inner motivation of the employees to be interested in the workplace safety culture and its goals. These methods are to use the employees' resources to the best of their ability and to engage them further in the workplace safety culture. If there are no concrete goals, the results are not fully monitored, or no bigger actual improvements are then done in the company, these methods are then not bringing much to the table and might not be worth using at all and are merely a resource and time drain. To improve and control the bigger picture, it should be done through risk assessment and analysis, which ensures that the development and improvements main and core focus would be to support the business' needs as required. (Korhonen, Moisio & Tuominen 2003.)

To achieve good safety management and good occupational safety culture in a company it needs steps and effort from all levels in the organization, so that the set goals and aims are met. One tool in safety management is reporting safety issues, hazards and safety observations. From the safety reports and observations one can make analysis necessary fixes and follow these up. The observations and reports as a tool have the idea to bring forward potential safety risks at the workplace so they can be fixed or prevented before anything even happens. Such reports include near-miss incidents, unsafe working practices and habits and actual occupational accidents. There can be many ways to conclude these observations and reports but the key point in these reports is that everyone at the company should have easy access to them and thus be able to easily and with a low barrier to report any possible safety issues and incidents. Workplace safety culture belongs to everyone and is everyone's responsibility, these reports are also part of the process to involve and engage all of the employees to act more with the safety culture and get deeper involved with it.

With the reported safety hazards and safety observations they can be fixed and processed and dealt with correctly starting the necessary process to ensure that the future tasks are not jeopardised in regards of workplace safety. This process of fixing and dealing with the safety observations and reports has a positive impact again at the workplace safety culture, since that then further motivates the employees to report more incidents and hazards as well as how they view that the management listens to their concerns. (Työturvallisuuspakki 2023.)

## 3.3 Improving The Safety Mindset

Improving the organization safety culture requires a lots of efficiency and certain amount of ambition and effectivity from the upper management implementing it in the first place. Before in an organization it is even worth to delve deeper and more in depth into the improvement of the safety culture methods it needs to: improve the behavioural methods of the employees and safety mindset improvement, it needs to have the basic and foundational elements well set and in place for safety culture overall. To achieve this one core element and key factor is sufficient information flow. It is up to safety managers and supervisors to brief and introduce the information to the employees about the basics and goals of the workplace safety. The organization's management system needs to be clear

enough, so that everyone in the organization knows their own role, responsibilities and focuses on the organizational picture. (Sennewald 2011, 33.)

Positive safety mindset turns the attention away from the steps leading up to mistakes and from failures. It instead focuses on those factors, which ensure the success of safe actions and procedures in everyday tasks and jobs. According to Zwetsloot (2017) and Hollnagel (2014) in occupational safety one should pay attention more to the success and what went correctly in the steps and process instead of the failures. The goal of safety culture is to see the continuous improvement of occupational safety instead of looking at the prevention of accidents. In recent years the Finnish Centre for Occupation Safety and Teperi 'et al'. have researched the humane factors and its effects to the occupational safety culture in Finland. Through their studies in occupational safety research a new theory/term has arisen which provokes a new kind of thinking methodology or approach to see occupational safety culture; the humane factors or Human Factors (HF). The goal of HF is to have even more proactive, positive, and more understanding view to the humane actions. (Teperi, Ruotsala, Asikainen, Ala-Laurinaho, Lantto, Paajanen. 2020, 28). In improving the occupational safety culture and safety mindset it can be approached by Hollnagel's definition of Safety I and Safety II as well as Teperi's 'et al.' definition of HF. By nature, humans want to and try to avoid accidents and create stable environments for themselves. This has led to occupational safety culture to be developed into reactive way, in which the safety hazards and risks are being eliminated by analysing the previous mistakes and the causes which have led to them. The key point in Safety-I thinking is to observe "what goes wrong" and the mistakes and accidents that are happening and trying to eliminate them. Human behaviour and actions are seen risks and the causes of the mistakes. (Hollnagel 2014, 43–49.) When you think the everyday actions of employees in an organization it is by a large amounts of successful actions and safe, which is the reason why Hollnagel has brought forward the ideology of Safety-II in safety management.

## 3.31 Safety I & Safety-II

In Safety-II ideology the safety management is proactive and about creating a flexible actions between the humans and the systems. By changing the reactive approach to proactive one can react to safety incidents and hazards well before anything even happens and thus mitigate possible risks before they escalate, and some larger accidents

take even place. The key principle in safety observations is the process of learning. Proactive occupational safety measures and investments can be seen as good precautionary steps. If some investment or change made that is made towards better occupational safety culture pays off, and there are no accidents, is the investment worth it and successful. Even in the event that workplace accident does happen, its effects due to the investment are most likely minor/lesser and better and more easily foreseeable. Thus, the costs of fixing and improving some safety aspect are less and provides better cost efficiency for future plans and actions. (Hollnagel 2014,138–167.)

When dealing with HF and talking about them in regards of major accidents they play an important role, especially when one tries to find out the root causes of the incident for example like the communication issues/problems or how alert the employees are. In the research of Teperi 'et al.' together with the Finnish Institute of Occupational Health they have focused deeper into the HF aspects when dealing with safety mindset and occupational safety culture. The foundation of the way humans think gives tools for organizations to build and improve their safety mindset, which has the means of helping people be successful and safer in their jobs. It has been noted that by understanding better the way humans act and think it is even easier to create a safe working environment and safe working procedures. The involvement of HF is in key role when improving the occupational safety culture and the safety mindset. (Teperi 'et al'. 2021, 27.)

The Safety-I ideology can be used both when performing risk analysis as well as in accident investigation. With risk analysis the idea is to be proactive, look and chart out as many possible future risks and potential hazards and thus mitigate them before they even happen. When looking ahead to the future, that is then being proactive and trying to pre-emptively stop accidents from happening. Risk analysis is often done only once at the start of some tasks or stops lifecycle. If risk analysis is performed multiple times during the lifecycle of the process and it's being updated continuously, that is then the requirement for the process of being proactive, otherwise the process is merely reactive. Risk management in general is a reactive process in most cases because it reacts to safety hazards and incidents that have been already realized or accidents that have already occurred.

Safety-I is also in the category of being reactive and trying to protect as a process since its core focus and its principle is to control the actions that go wrong and the issues occurring

in the processes. These controls can often be done as some form of restrictions or limitations to processes and actions. This can be problematic on the other hand in some job tasks since the more flexibility and variability you have on the tasks the easier it is to do it and provide better aim and ways to perform said tasks. By limiting it too much it can start to affect the productivity and efficiency of the task itself and thus hinder the process. This limiting factor is not a part of Safety-II since it tries to approach the safety culture and safety mindset from the opposite side and way of looking at this then again. (Hollnagel 2014, 56-58.)

Where as Safety-I tried to look at actions which went wrong and the core aim was to have the overall state being as having as few mistakes as possible, Safety-II is an ideology in which the core aim to have as many correct actions as possible and it looks and focuses on the procedures that have been done correctly and tries to emphasize those procedures then. It can have the characteristics that correct actions are done in expected conditions and environment but also that you have correct actions done in unexpected conditions as well, so that the number of favorable actions is as high as possible in the observed situations.

Safety-II has two main questions when looking at the procedures and how it works. How things go right, and why do things go right? The problem often with this ideology is that in daily working life in vast majority of the cases, the actions and procedures are done correctly, there are no mistakes and no safety incidents. So, the understanding of how and why these actions are done correctly and how they are done is the main point. (Hollnagel 2014, 134-135.)

Safety-II has the focus on correct actions, and missing the failures or the procedures that go wrong. This is the cause of active engagement. The more successful and correct actions are, the safer the system naturally is. Safety is the result of actions and procedures that do happen, not something that does not happen. In safety observations it is natural to observe and analyze things that do happen, since things that do not happen cannot be noted down, analyzed, or be acted upon and improved upon at all. To have a safer system and improve the safety culture you need to result from actions that have happened and the data and analysis from that, to get the understanding why something happens correctly as it does. (Hollnagel 2014, 176.)

When adopting and implementing safety-II principles and procedures that does not mean that everything must be done then differently nor that one should abandon entirely the principles of safety-I. Safety-II merely brings forward a way of looking at the things differently and seeing the safety culture in a different light. One should still keep observing the actions that go wrong and trying to identify the potential risks and hazards to fix and improve those. Methodology such as root cause analysis can be performed with this different mindset and ideology which can then provide the idea of variability instead of probability. (Hollnagel 2014, 145.)

To use Safety-II "correctly" or efficiently it should be used together with Safety-I still. One should look at both instances of actions that go wrong and actions that go right. From this one can understand and improve from the actions that fail and succeed likewise. The company should not just merely sit back and wait for something to go wrong and then evaluate and analyze that with Safety-I methodology but rather understand what happens in situations where everything is working as it should be. Safety-I has the assumption that the procedures function correctly because the employees follow the rules and regulations set in place, so the tasks work as they should. Safety-II then on the other hand has the assumption that the procedures function correctly because the employees adapt and change their attitudes and actions with the changing environment and actions around them. Finding what these changes are and trying to adapt to the current system and thus learning from them will be way more important than trying to find out reasons for negative actions that happen quite rarely. (Hollnagel 2014, 149.)

# 4 Research

For the research methodology for the thesis topic a mixed approach of both quantitative and qualitive methods were used. For the quantitative method a multiple-choice questionnaire was released for all of the DHL Express Finland employees, out of all of the employees approximately 30% answered, the exact numbers and figures of the answers and statistics relating to the DHL Express are not mentioned as per the signed Non-Disclosure Agreement (NDA). The questionnaire had a few multiple-choice questions and for each question an open text answering field to further explain the answers. Questionnaire had also question where one was able to choose several characteristics that suited them. At the end was reserved space for open comment. This method was selected to gather easily as many responses as possible relating the workplace safety topics from the entire staff of DHL Express Finland. For the qualitative method a personal observation was done in 2 separate instances, following 2 different training sessions/meetings relating to the workplace safety at DHL and how to improve it. Additionally in qualitative methods I interviewed two Occupational safety experts. Thought these interviews more insight knowledge was gained for the safety topics.

## 4.1 Data Collection

Data for this thesis was collected with doing a questionnaire for the employees of DHL Express. There were multiple questions where the employees had to answer on the scale from 0 to 5, where the 0 was does not concern me, 1 and 2 were disagreeing strongly and disagreeing to the statement/question, 3 was no real opinion either way and 4 and 5 were agreeing and agreeing strongly to the statement/question. After each question was also space where the employee could also explain their choice further. Following the numerical scale questions there were few multiple-choice questions where employee could choose 1-3 options what applied to them regarding workplace safety. Questionnaires are used to gather opinions and information from a larger pool of people quickly to gauge the general perceptions and ideas about certain topic or certain aspect about the organization or culture. As questionnaires gather a larger pool of opinions and ideas, they can be used to focus on improving specific topics and helping to find to find the next way to move forward.

Questionnaires have certain limitations and issues on information gathering system though. The numerical analysis that they provide can lead to the illusion that the results are more accurate than in reality, since the results might not be as accurate or valid as the simple numerical values from the results point out. Also, when trying to find a root cause for some problem questionnaires might not be the best possible tool for this task, since they might merely point out already known/existing or new symptoms for the problem rather than any actual solutions. The validity of the data can be put into question if the answer pool is insufficient from the original target group which can compromise its accuracy and validity. If the questionnaire itself is made poorly, if it has confusing or bad questions or questions that do not target the audience fully, it can lead to incorrect or misleading conclusions based on the answers provided or if the interpretation from the results is faulty this can lead to wrong conclusions as well. (IAEA, 2016, 23-24.)

## 4.2 Data Results

The responses were quite decisive as there was no bigger indifference on most of the answers. On the questions about generally about workplace safety, how they feel about workplace safety in general at their workplace and if they feel safe and well informed, that they have gotten enough information, knowledge, and training about workplace safety; the large majority agreed that they have been properly trained and informed about workplace safety matters and principles. These questions were by far the most homogenous by the answer results and had the lowest amount of difference in them as the average was also higher among these questions. Some of the questions did manage to break up some disparity among the answers. For the statement that if someone is working then instead on the flip side safely/following the procedures of workplace safety, that is then left unnoticed/unrewarded. That question had the largest amount of divergence between the answers. The majority of the answers were that it does not concern them on this question, second largest group was the people that agreed with the statement that working safely does not get noticed. The answerers felt that the main focus is on the safety observations and near miss reports and looking after the actual accidents which do happen because of the unsafe procedures, rather than focusing on the positive side. On the question if working unsafely gets left unnoticed the large majority disagreed with this statement, but

more than few people did agree with this statement as well; pointing out that they might not want to correct their colleagues' actions and that even the supervisors might not intervene in unsafe working habits.

Slipperiness was a recurring theme that many also felt was problematic, most notably due to the nature of the weather and conditions at the time of the questionnaire in Finland. When directly asked in person, many of the employees did not know that the facility had couple of containers outside on both sides of the building for all employees being able to spread around small rock gravel to help to combat the slipperiness of the ice on the ground. This leads to then to the factor that the employees themselves feel like this is a larger issue.

Another very common and easy to counter issue was people not using the proper safety gear and equipment on their tasks and thus ignoring set workplace safety regulations. The answers provided to why this is the case was given due to time pressure, being lazy, wanting to cut corners and feeling that for a simple/quick task putting on some safety equipment is not necessary.

The question relating to workplace safety training and whether they were content with the amount they got, was on the numerical scale quite divided. Out of the text answers most people did point out that they would like to get more workplace safety training merely as a repetition to remind them better of things, not necessarily as a necessity or that they would need it since they don't remember or know something. One extremely common topic and similarity on lots of the answers was the mention of "office work". Many of the answerers were presumably office workers and thus felt like the questions relating to workplace safety hazards and accidents were not concerning them. Out of all of the questions almost none of them had in larger quantities on the numerical scale the option "does not concern me". This answer result was quite dominant still in the short spaces, as many of the answerers pointed out that they had the feeling these questions were concerning them, since they are working only at the office jobs.

On the second last part of the questionnaire nearly all of the survey respondents answered exactly the same to the 3 questions where they could choose between the few choices that applied to them. The points here that arose the most, was that: 1) not all people answering are concerned about the safety of their superiors
2) quite a few of people feel like their safety actions at work don't affect their friends and

families and lastly

3) there were few people that did not know what to do if someone at the job gets a mild injury or a bruise. The last point is especially interesting since the overwhelming majority felt that they had plenty of workplace safety training and know the safety training well. This might be due to the fact that theory does not always correlate to practice. A couple of the answerers also pointed out that they know in theory some of the safety practice what they need to do/what is expected from them, but because they have never had to do it in reality, they are unsure how it would play out in reality. Lastly overall, on the longer written question about accidents and their causes the 3 same points arose as the "main topics" or the focus among all of employees answering the questionnaire.

1) Indifference/not caring about the task/not paying enough attention to the task at hand

2) Being in a rush/hurry or having too much of a time pressure being put on

3) and lastly simply not paying attention to the actual guidelines and workplace safety rules and or also willfully ignoring the workplace safety regulations that there are put in place

Two other main points that arose in answers were having tight spaces, this problem is only in place because of the lack of storing space currently and because of the current season and unable to store cages outside during winter season when there is snow and minus degrees outside. The second one being weather conditions aka. slipping outside or encountering some traffic accident during the drive back home from work, as well as human errors.

There were some answers that were at the very far end of the spectrum about how employees felt about these topics and answered very differently from the rest of the masses. A couple of answerers felt that in some of the problems there are no actions being taken before someone gets seriously injured and even then, there is not enough actions done. Some also felt that currently there are some very crucial and threatening workplace safety hazards left unattended. The same answerer did not specify in any later part any more what exactly are the problems, what they feel like is wrong or what could be done better.

## 4.3 Expert Interviews

For the expert interview there were 2 specialists who have both lots of experience with occupational safety and safety culture. The first person has experience at working as the VP of Operational Excellence, Safety and Environment (Finnair, Metso) and the second interviewee as the Head of Occupational safety (Finnair, Kesko, VR, Coor). The questions were relating to safety mindset, the foundations of safety mindset, process of going forward in safety culture and Safety-II.

Safety mindset is defined as that the whole organisation is tuned to safety in everything they do. Every action is done safely and meets the policies. The members see value in that, not only because it is mandatory from the company but because they themselves see the value in that. The safety mindset reaches outside from yourself, it reaches your colleagues, supervisors, friends, and family. (Rintala) Safety mindset is a way of thinking safety in everything you do in your job and everyday life also. When the safety mindset is strong, you don't need to separately think about what actions you do to ensure safe working environment and actions, it becomes naturally and part of everything you do. (Pelin)

When building the foundation for safety mindset the most important factors are clear leadership and keeping that alive. Safety mindset and safety cultures are not only "themes" or campaigns that are done sometimes for a brief period of time, but they are also active and always part of the company's agenda always. (Rintala) The trust in the employees and taking them actively part of the process plays a key role in building safety mindset in a company. Being active and having good 2-way communication is also important as well as seeing that safety is a core value and being clear about bringing this forward. (Pelin)

If a company is struck with their occupational safety work and their measurements are not bringing any noticeable changes the company should take a step back and go back to the basics. The KPI's and other measurements are not bringing anything the company if the safety mindset is not there or is missing. If the personnel do not, simply care about the safety at all and the management isn't doing enough to build the safety mindset the measurements won't do alone much. The company should look at the root causes of the

incidents and why they are not able to make an impact on these? If the company is merely stuck on the collection of data, they need go forward from merely having the reports and data collection with analysing it properly and start looking at things like HF etc. (Rintala) The company should take clear directions in what to fix and have a concrete development plan for safety culture and mindset. They should only focus on the most critical areas and not try to do too much at once. They should also try to focus more on the positive side on things and look at the successful aspects of their business, even the smaller ones if necessary. (Pelin)

Safety-II is an intriguing thought process but there might not always be the right time to go and change it. If the company's Lost time incident frequency rates (LTIFR) vary too much on a monthly basis that means that the company still needs to make some improvements on the basics. The company needs to be willing to put in the resources to have the data analyzed in some form automated with AI to find anomalies and so on. Even if the company's safety maturity is high on scale, for example on the Bradley curve near the 4th level it might not be enough still since the change to Safety-II can be quite large. (Rintala) The company also technically never "changes" into Safety-II it is merely a tool that supports Safety-I and complements it. When using Safety-II the company should observe and have the focus on the everyday work and improving that aka. Having continuous flowing work. This means that the measurements which are used to measure actions and procedures cannot be the traditional ones, such as Lost time incident frequency (LTIF). That is why the company needs to have high safe maturity especially from the upper management of the company. (Pelin)

Once the company does have the safety mindset successfully build it is also needed to take necessary actions that it does not start to decay and disappear. One of the best ways to achieve that is to keep the safety culture alive and active at all times and part of the company's everyday life and have it visible everywhere. That means for instance  bringing all newcomers to the same page as soon as they join, keeping the safety visible in strategic KPIs etc. Even though the company is satisfied with their current safety level and safety culture there still needs to be some kind of roadmap to have certain targets for improvement for each year and so on. The company needs to have inner drive to further improve themselves and get better all the time still. (Rintala) The upper management

needs to be visibly engaged and committed to the safety mindset that it does not star to decay. The employees need to be involved as much as possible in the safety culture actions as well as creating the overall feeling that safety culture does indeed belong and is everyone's business. There needs to be plans for continuous improvement and even though the company might move to the next level in their safety maturity scale they should always strive for improving their plans and procedures, important factor here is for example the trainings for employees. Again, in still active communication is key. Communication and information flow that safety culture is not a something to be taken for granted. One should take as a conscious action every day to work safety and support the active safety culture and safety mindset. (Pelin)

## 4.4 Personal Observations

As part of thesis information gathering process several visits to the DHL Express Headquarters at Vantaa was concluded to observe a workplace place safety training session. Insightful information of the safety processes and employee involvement was also done by joining team risk assessment session, assessing the risks at their personal work area and designated workplaces. The first event the workplace safety training is part of mandatory training that all employees must take at some point during the year. The training seemed overall in my opinion good, since it covered the most common and typical safety hazards that could be encountered both in office- and terminal- and courier work. The employees were made to identify different safety hazards and potential risks on their office environment as well as while on to road to potentially make them realize what all kinds of different potential safety hazards there might be even on their own office environment which could lead to potentially quite serious injuries. You could sense from some people participating maybe that the training was made to be obligatory. Most of the participants took the exercise seriously and took part actively in them. The dampening effect in perhaps some of the examples were that they were only figurative examples and not necessarily tied to the reality what they had in their own office workspaces. Also, one of the exercises covered more what kind of safety issues a terminal worker might encounter during their job. Even though it is good for the other employees also to be made

aware of said safety hazards they might encounter, it is neither necessary nor necessary for their work or what concerns them at their everyday tasks.

Also, some of the people taking part in the exercise did not really feel that safety hazards are relevant at office work and belittle slightly the potential risks/hazards at an office job as well and thus did not maybe take the exercise as serious as they could have. While it is true that on office jobs the potential safety hazards are lower overall also the potential damages done to personnel are quite milder and the risk of something extremely hazardous happening is way lower rather than in comparison to courier or warehouse employees. There were also other useful theory aspects opened and used in the training such as personal environment observations before engaging in some work tasks to reduce potential safety hazards in said task if it might be dangerous to perform said task potentially, looking at potential causes for workplace incidents, most common causes for them etc. These theory examples might have made it clearer for the employees that even though they feel like small incidents or near miss cases that do not result in any injury at all or only a minor injury adds up to the total, which might lead eventually to that there is either a serious life-threatening injury or at worst case scenario a fatality.

The risk assessment sessions are done on team basis so we could get the best possible feedback and analysis from the small team itself hearing from each team member what they thought were the risks at their workspace. We started the session with simply walking around the team's workstations/area and observing what different things would be the safety risks/hazards there. We observed forklift driving paths were crossing very busy/popular walking path for employees who have already beforehand posed some issues and still despite the fixes prove to be potentially dangerous since there is a risk of a forklift driver driving over someone walking or hitting them and causing potentially very major damages. We also observed that in some places it was difficult to see the forklifts coming which were in most places already covered with a 360 degrees mirror near the roof or above the walking path so pedestrians could observe the oncoming forklifts more easily. In some positions these were not present as of yet and could be installed still to provide even better visibility for people walking in the hall, as well as suggestions for limiting pedestrians walk paths so they would be less likely to walk directly onto oncoming forklift traffic right outside from doorways which provide close to 0 visibility before you are actually out from said door and already in the path of the forklift.

There were also observations and suggestions for limiting forklift driving at a certain path during the busiest hours at morning and evening when most of the employees need to walk back and forth where the forklifts would normally drive and instead, they would then have to drive around completely and not use 1 doorway at all. During the walk at the terminal one observation and potential suggestion was the possibility of employing some sort of "traffic light system" or simply a singular warning light to indicate if there is an oncoming forklift behind the corner/behind the door or vice versa for the forklift drivers if there are pedestrians walking on the other side of the door. The members of the team were extremely proactive during the walk and pointed out multiple times potential safety hazards that they felt like were unsafe at the everyday work tasks and what corrections that were done were not sufficient and gave good alternative options what could be done to further improve their safety and reduce the risks of someone getting injured. They saw multiple different risks and safety hazards, and when being faced with some safety issue that could not be so easily fixed, they came up with other possible solutions how it could be solved. All of this came from merely them having interacted with these things and machinery on daily basis on their job constantly.

After the safety walk around the terminal, we went to meeting room to conduct risk assessment about the topics and areas we'd seen during the walk and other areas like ventilation, heating etc. going through all of these specific areas one by one to see what their risk assessment scores were and adding anything additional risks as well to the list. Some of the employees at the team did not fully understand the meaning or usage of the risk assessment matrix and it proved at the start perhaps a bit too difficult to conduct the risk assessment to its fullest potential since not everyone fully grasped the idea and meaning behind it. Despite this all of the team members were extremely active at this part, perhaps even more active than during the walking. They were extremely keen on providing their insight to the risk assessment matrix analysis which risks their job stations had, how severe they were, what would be the potential hazards and consequences of said risks then, what could be done to fix these issues/safety risks and even adding some additional potential safety risks that were not even on the list already about the potential safety hazards at their workplaces.

On both cases the employees were active and providing concrete solutions to their own job places and reflecting well regarding to their own job positions what risks they have there and how would that relate to their own tasks and surroundings. People were active

and providing some good conversations when tasked/asked to do so. At the risk assessment section one visible observation which could be easily also felt from the team's internal interaction and activity was that they were way more active and providing more fruitful solutions and ideas in regarding to how they could improve the safety at their own workplaces. This was the cause more likely because at the risk assessment the task was considerably more engaging/tying it to their actual job tasks and physically being at the source where they work every day and observing merely what they felt like were the causing factors or potential causes for safety issues. Rather than being at a meeting room doing imaginary exercises what are the potential safety risks on this made-up scenario or having to think about potential safety hazards that do not exist in your job place, it is easier to get involved in a task that is closer to your actual own job/task and doing it in reality rather than entirely on a meeting room also engages the people more.

## 4.5 Research Results Analysis

From the questionnaire multiple similar key factor points arose as the defining factors why the employees of DHL Express in Finland feel like accidents happen and how they view their workplace safety. The employees feel because of being too hasty and careless that leads to tons of mistakes and safety issues. This can be put down to human errors (which was another recurring topic in the answers relating to safety issues and accidents), also due to the fact that at certain times the various office tasks are requiring very detailed and precise focus. This being both filling custom forms for the customer or moving said customers items at the warehouse with a forklift. It can be easy for your mind to wander and being focused still on the previous task at and not paying attention to the wire, bag or the pallet on the floor and falling over it. Having your focus even for a split second in something else can result in very major incidents such as getting run over by a forklift or getting hit by a door for example. Another very prominent topic nowadays which also surfaced at the answers was the usage of phones. This is one of the most common disturbance factors nowadays in our work life as well as private life. Focusing on the screen of our phones makes us way more prone to having our attention split into multiple

different places at once and hence the risk of even some very serious workplace accident is ever more imminent.

Another major topic for accidents was being careless and thus not paying attention to whatever you are doing at the moment and having higher risk for accidents. Paired with this factor was simply ignoring or belittling the workplace safety regulations and rules and willfully ignoring them. This is one of the most common root causes also for many of the accidents that happen at workplaces since employees are simply ignoring regulations and rules because they have the feeling that "nothing bad has ever happened before here when I ignore this rule, nothing bad will happen now either"; this being either not using a seatbelt when driving with the forklift, not checking properly the 360 mirrors if there is a pedestrian on the path or not using the proper safety equipment. People don't often realize that even a few second tasks being done wrong can lead to quite serious accidents. Even after someone gets hurt, but only lightly, that might not be enough for the rest of the employees to react to this. Many of the co-workers feel like that it is not either their job or don't care enough or don't want to go and mention to their co-workers if someone is acting unsafely, even though this should not be the case. Like on the 4th stage at the Bradley curve, workplace safety should be interdependent, and everyone should care about everyone in regards of workplace safety. Through human factors and researching more why and what drivers the people to ignore willfully these very simple safety precautions could be perhaps reached to an understanding of why the employees don't care to follow these simple rules and thus change the customs and practice of the workplace that the employees would mind more about the rules, their own safety, and others as well.

Some of the employees answering felt also that there are very serious safety concerns and safety hazards at DHL, and nothing is being done about these, not even after someone gets hurt/injured. Some others also felt that the employer does not change/do changes because it costs too much. Through discussions with the Health and Safety manager at DHL that these statements were concluded not to be true during the evaluation of the answers. Even though these are not true necessarily it is still alarming/concerning that some people (albeit these people are in the vast minority of the employees) feel like this. The entire safety mindset culture and fundaments of it is based on the fact that all/the large majority of the employees believe in the workplace safety culture and are interested in it as well as contributing to it; through near miss and safety observation reports, informing their supervisors if they are conducting some work tasks

unsafely and notifying their co-workers if they are doing something in an unsafe manner. To support this mindset and fundaments there needs to be changes done to safety issues/concerns as they are reported upwards to the management. If the employees get the feeling that their feedback is left unnoticed and nothing is being done when they try to contribute to the workplace safety, why should they bother? This is a very dangerous process since that's the beginning of an iceberg. Even a few individuals can sadly shatter and undermine years of workplace safety and safety mindset work and groundwork. These singular individuals that feel like their feedback relating to some safety issue or concerns were left unchecked or completely ignored can thus then spread around the general consensus and feeling to others that the safety observations aren't being looked after or that the management doesn't care about what other employees suggest or don't want to commit into fixing something because it would cost too much or take too much time etc. The reality is that larger fixes to something can take considerable amounts of works hours and time. Even if the suggestion is something as simple as: "we have too narrow working spaces for walking and forklifts near the loading docks" it can take months or even years to address this. Especially in larger companies there is a lengthy process to go through the suggestion, addressing the potential risks involved in it if it is truly something that needs larger changes to be made for it if the risk involved is that detrimental. Then if the risk is considered to be that meaningful that it needs to be addressed there is its own process of coming up with the best/most cost-effective solution for it to mitigate/eliminate the risk factors, doing a bidding price if it is some larger investment from said company to fix the issue and so on. All of this work happens most likely at the "background" or on the "higher level" through upper management and some other third-party factors so the employee(s) that made the original safety observation or suggestions might not have any idea for several months what is happening or if anything is being done to this issue.

On this example case and other similar issues clear and detailed communication to respective employees and levels all the way down to necessary factory level employees is important and why not as well all employees that wish to see the process involved in the fixing the safety issue. Informing the employees that the safety concern has been noted, a process has been started with third party contractors/companies to address and fix the issue and it is underway/in the process of being fixed. If possible, also providing some form of timeline or smaller updates in which phases the fix is underway might provide some clarity and transparency to everyone involved in this that the needs and concerns

relating to workplace safety is being taken seriously and there is a process brewing "out of sight" and it will be fixed eventually. If for some reason it is simply not possible to be fixed/done exactly how some employees wishes, for some reason or another, it would be still clarifying to detail why such task/fix is not possible. If the safety concern persists or is detrimental enough what other fixes are being done, then instead to alleviate the safety issue as much as possible and ensure safer work conditions.

In multiple cases and questions another recurring topic for workplace safety and what the employees answering felt that was a larger workplace safety issue was the conditions of roads while driving as well as walking to the office from car/bus stop or going outside quickly while on a break etc. As well as the tight spaces around the terminal. Both of these issues are merely short term/seasonal problems. In Finland during the winter times slippery ice causes lots of injuries alone pointing by the statistics collected by Publications of the Ministry of Transport and Communications 2022:2 as 30% out of a bit over 1000 people answering had slipped during that or previous winter and 15% had had to get medical attention for that. (Liikenneturva 2021). Also because of the large amounts of snow outside all of the metal cargo transportation cages cannot be stored outside during there being snow and extremely cold weather outside since this would damage the cages. While the cages are being stored inside there is insufficient space for them to allow completely free movement for the forklifts at the hallways, pedestrian passage as well as the storage space for the cages. These answer results are most likely biased because of the current season and them being recurring and most topic issues at the moment. These are only relevant luckily for few months at maximum per year and there are already sufficient methods to prevent accidents happening because of these reasons; putting sufficient amount and consistently more small rock rubble to prevent slipping outside on the sand, being more mindful when driving home from work or to work, as well as being more careful and being aware of one's surroundings when there are tight spaces and not extra safety space/room for movement. This all requires the employees to be aware of these seasonal hazards and just pay attention twice as much during these heightened safety hazard times of year.

Albeit there were only a couple of answers that were very much in complete opposite and contradictory to the rest of the answers there might be the most interesting ones. Some people from the answerers felt like that there are very large and crucial safety hazards at the workplace that are not addressed, even before someone gets badly hurt. If this is

Turku University of Applies Sciences Bachelor Thesis | Santeri Lamminpää

indeed the case and there are some safety hazards that the safety managers and upper management does not see and take care of, should definitely be looked into to fix them. Even if this is not the reality the mindset behind this might be something worth noting down and observing. What makes some employees have such a negative image of their working environment? Also, there is the saying "one rotten apple cannot spoil the bunch" does apply also here in terms of safety culture and safety mindset. Even if few individuals feel like that there are very large safety issues at the company and that nothing is being done before someone gets hurt this negative and wrong mindset can spread. They might also get the feeling then that nothing is being done by the employer to fix these issues and thus these people have then instead of a good positive safety mindset a negative limiting mindset. This way of thinking can easily spread, and these few "toxic" individuals can undermine the other good safety mindset of others and further decay the build safety mindset.

At DHL Express there has been very much "in the spotlight" in the last 3 years the safety mindset talk and "safety first" campaigns and ideology. This has had largely a very big impact on the numbers and visible change in the statistics of DHL Express. The amount of safety observations has increased tremendously every year for the past 3 years. Also because of the massive increase of safety observations there has been some decrease in the number of safety incidents then as well. This shows that when safety culture is being brought more up, this increases the safety observations, which makes the employees more aware of the issues even if they aren't themselves necessarily reporting that often the potential safety issues and hazards and this leads to less incidents overall and decreased in the LTI and LTIFR.

# 5 Own Thoughts

There is obviously very visible and clearly a good budding safety culture and safety mindset at DHL Express. It is still very much only at the start of the process, and on the Bradley Scale DHL Express is somewhere between the second and third stage at the moment. There are some massive changes and improvements already made in the last 3 years at DHL Express Finland section but there is also great room for growth and improvement still. The questionnaire results showed that sadly most of the employees don't care that much about the safety culture overall and ignore for a reason or another the prevalent safety regulations and rules.

The possible changes and improvements which could be made to improve the safety mindset at DHL Express are further engagement, better communication on both sides, HF, and having the immediate supervisors being more active in the safety culture.

Things like the risk assessment being done in smaller teams is a very simple and great way to engage and actively participate the employees more in the safety culture and engage them to have better safety mindset themselves. Theoretical lessons and trainings of course also train the employees on theoretical basis what they need to look out for in terms of safety culture, working safely at their job and being mindful of their colleagues and supervisors following these rules as well. There might be still largely the general limiting mindset that "safety is someone else's responsibility and business". Which is false. To the question: "Who's responsibility is workplace safety?" The only correct answer is Workplace safety is everyone's responsibility. The employees at DHL Express feel like someone else will take care of the workplace safety and fix the issues, they see something as small and simple as safety observations as a forced chore rather than actively improving the safety culture at the workplace. Other things like safety workshops also help to improve the safety mindset among the employees and engage them to be more active in it.

As was discovered in the questionnaire some of the employees might not realize what everything is being done after they do safety observations themselves. They might get the feeling that they are not being listened to and lose the motivation to participate in the safety culture anymore. The employer should be active in this regard and have clear, transparent, and good 2-way communication with the employees to indicate that they do

care about the safety observations the employees are making and that they are being taken care of. Some larger changes might take up to several years to be fully done, so on cases like these it might be beneficial to have clear process map on which part the process is going at the moment to fix the issue that someone reported on their safety observation or near-miss incident etc. Another thing that could be done for this is that the safety manger or supervisors calls or goes to talk personally with some of the more meaningful safety observations. This lets the reporter get the feeling that they are being listened to and that is important matter. The safety manger might get a better understanding of the reported issue, and this further engages the employees more to be active in their safety culture.

Human factors play a massive role in safety culture and could be the key deciding factor as well at DHL Express in order to go forward with the safety culture and improving the maturity of its safety culture. To get the deeper and further understanding why the employees act like they do. Why do they ignore the very simple safety regulations and rules, even though they do very well know what they are supposed to do. What makes them have the feel that they should rush or cut corners and then to further build the mindset towards the desired and correct safety culture and actions.

## 5.1 Further Future Development Possibilities

DHL collects and publishes safety reporting on weekly basis. However, the main focus being on reporting itself and not that much correction as same safety observations occurred week after week. DHL could include more HF and take further step from reporting to analysing the data. Through usage with different AI tools perhaps could be a massive leap from going forward in analysing the data. From analysis there might be more insights to work further with repeated observations and get them off the weekly list.

Another topic would be to work closer with the multiple different teams working at DHL to get a true deeper understanding of the HF at all of the possible job tasks since even them can vary tremendously between the office, terminal, and courier jobs. Through good and fully fledged HF understanding could one create a new plan how to work with the HF what the employees have a come up with the best possible plan to minimize the LTI and

workplace safety hazards that could be avoided merely with better planning and own actions.

As DHL Express' safety mindset lies somewhere between "dependent" and "Independent" on the Bradley curve another future project could be research and possible implementation of a plan how to get DHL on the third and ultimately on the final fourth level. Once DHL starts nearing the fourth level on the safety culture it could be also possible to start implementing and utilizing Safety-II as a principle. Technically there could be a possible project now already shortly after this for a process step plan to implement and integrate Safety-II as an idea and methodology to DHL. It would not root that deeply and would not have as big of an effect as it could, if done some time later into the future after DHL's safety maturity has improved from its current standings.

# 6 Conclusions

There is a culture and mindset about safety at DHL Express, one large factor which can be drawn as a conclusion is that the control or supervision is lacking in terms of supervisors. The supervisors don't remind/monitor well enough the required safety gear on their subordinates and on their teams. It seems that they are lacking still partly the basics on safety culture and mindset, and if the supervisors don't have the necessary safety mindset it is almost impossible to have implemented further down to their teams. On safety culture and safety mindset the safety information and supervision should come down from every employee's closest manager. If the safety manager of the entire place starts preaching about safety rules and managing some multiple levels down employees, it might not be as effective as if it would come from the own manager.

Utilising the data by getting from reporting to analysis, will help DHL eventually getting more focus on preventive than reactive safety. With the current analysis done on this thesis it was possible to analyse and see the growing and improving workplace safety culture and safety mindset slowly taking root in DHL. These processes are never easy or fast, so it will take some time and more continuous effort to further improve the safety mindset at DHL to be best possible mindset what it could be.

DLH Express has taken safety as first priority. As they keep safety high on the agenda, they need to make sure all management layer "walks the talk", takes the responsibility of being their team's safety ambassadors in all they do by example, thus can the safety mindset can flourish. Safety doesn't happen by accident, you need to aim to that every day in everything you do – that's the receipt for DHL Express as well.

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