

Conveyor Belts Statistically Dangerous?

Abé Bosman
Attorney

1. Introduction

We were involved with Anglo American Technical Services (AATS) to investigate 'Conveyor Best Practices', this brief was given to AATS by SIMRAC. The investigation also focused on international trends and made comparisons between installations in the RSA as well as overseas installations. Our specific scope, as attorneys was to look at the legal aspects and specific legislation. The question that we were constantly trying to answer for ourselves was, could the statistics supplied to us be believed?

The legal implications of providing statistics to different Departments of Labour (including mining safety authorities) of the different countries were also considered.

2. Problems experienced while obtaining information

Our main concern was that only English speaking countries' information could be accessed. Most of our information was obtained from the USA, Canada and Australia. Although other countries especially third world countries utilise conveyors their statistics and information was either lacking or non-existent. Third-world countries in most instances did not have WebPages and this did not expedite the research. Legal practitioners also specialising in our field could not share information freely because of the rules of ethics binding them and the attorney and client privilege that exist between the parties concerned. Accidents were sometimes contributed as conveyor belt accidents but it would for example relate to person dropping a piece of equipment on his foot i.e. an idler and that it then would be deemed to be a conveyor belt accident. Some companies were also worried about divulging information that may be confidential.

3. The current state of safety around conveyor belts in South Africa

It was found that almost every mine (Mine Health and Safety Act No. 29 of 1996) in South Africa utilised conveyor belts companies falling outside the mining environment (Occupational Health and Safety Act No. 29 of 1996) were also investigated.

Statistics for conveyor belt accidents supplied by the Department of Minerals and Energy (DME):

Year	Fatality Rate / 10000 workers	Injury Rate / 1000 workers
1995	0.01	0.11
1996	0.01	0.09
1997	0.01	0.10
1998	0.02	0.09
1999	0.02	0.11

As can be seen from the table above, when compared with power tools, conveyors are relatively safe.

We also visited sites with kilometres of conveyor belts that have not had an injury for 5 years related to conveyor belts.

4. Concern with regard to statistics supplied by the DME

- i. Very little information is reported about the accident, only the bare essentials are stated. The MHSA requires that the employer must be pro-active to prevent accidents.
- ii. It was also not possible to link the injuries per hours work or per tonnage moved by conveyor belts. In other words, the exposure level was not easily measurable and to compare it with the conveyor belt injury.
- iii. The cause of the accident is almost always indicated as a single issue. To the outside observer it may appear as though accidents almost always have one or two basic causes. Never is it investigated why this unsafe act or condition is present. This gives the reader practically no information to work with in providing a safer working environment. From this it would appear that underlying causes and contributing factors are not taken into account. The MHSA in specific sections 11(5)(c) and (d) requires employers to investigate accidents and incidents to identify unsafe acts and conditions. This investigation can be held jointly with the DME in terms of section 60 of the MHSA. It would be a valuable contribution to the industry if the statistics could include information such as the hazard leading to an accident, the danger involved with it, the eliminating, mitigating or controlling factors. This would enable companies to implement measures to reduce or eliminate similar accidents.
- iv. The information obtained from such investigations mentioned in the previous paragraph should be logically analysed and summarised indicating trends, unsafe acts or conditions etc. which can be utilised for the greater benefit of health and safety in the mining industry.
- v. The “reported reason for the accident” was considered along with some of our own experiences and it became quite apparent that there is a ‘culture of blame’ in the mining industry. In very few cases did management accept responsibility. Quite often a reported reason for an accident would be “*Failure to use safety devices*” but the underlying reasons would not be mentioned. The USA Department of Labor (MSHA) would analyse accidents more extensively under the following headings:
 - General information
 - Physical factors
 - Description of accident
 - Conclusion
 - Violations.
- vi. If the definition of reasonably practicable is reviewed:

“**reasonably practicable**” means practicable having regard to;

a. “*the severity and scope of the hazard or risk concerned*”;

If the severity of the hazard or risk is such that the reasonable man would not guard against the hazard or risk is such that the reasonable man would not guard against it, the employer or the mine will not have to protect against the hazard or risk. The same applies to the scope or extent of the materialisation of the hazard or risk. One should carefully consider the history with regard to a specific hazard or risk as this will indicate the severity as well as possible scope. Case studies of what has happened in similar operations may also be used to assess the severity and scope of a specific hazard or risk.

b. "the state of knowledge reasonably available concerning that hazard or risk and of any means of removing or mitigating that hazard or risk";

This implies that you do not have to guard against the hazard or risk we know of, but of which, to our knowledge, there is no means of removing omitting that hazard or risk. This may at first hand appear to be beneficial, but it also implies that Mine Manager will constantly have to keep abreast of information regarding any possible hazard or risk in his specific industry.

c. "the availability and suitability of means to remove or mitigate a hazard or risk";

The Mine Manager should keep abreast of information regarding hazards or risks arising in the industry within which the company operates.

d. "the costs of removing or mitigating the risk in relation to the benefits deriving therefrom";

This is obviously contentious, as it is difficult to quantify the benefits derived from occupational health and safety measures. Each situation must be regarded in isolation taking into account past experiences with regard to a specific hazard or risk. As an example, if you had various foot related injuries, the benefit derived from quality safety boots will be great. The cost of the safety boot can then be weighed against the already established benefit and a quantitative decision can be made. One can also refer to similar employers in the same industry to assess the possibility of a hazard or risk materialising. If the possibility of an injury or occupational disease is remote, then the benefit will be small.

From the above it can be established that the "knowledge" part is essential for management to make a calculated decision on the how to operate a safe company or mine. If the information supplied by the authorities is not correct or clear informed decisions cannot be made on what is a hazard or a risk in relation to conveyor belts.

5. Why is accident information not more clear?

i. Right against self incrimination

Employers are careful against incriminating themselves during accident investigations and therefore limited information is supplied to the Inspectorate. There is obviously a conflict of interest in trying to establish the truth and not to provide information that may be used in a criminal or civil matter against the company. The irony is that the USA information available on the Internet was the most comprehensive and transparent information of all countries reviewed. We are all aware of the culture in the USA whereby people litigate for the smallest reasons and the courts award vast amounts of compensation.

ii. Criminal liability

The information contained in these investigation reports is presumed to be factually correct and can be used to prosecute the company or its employees.

iii. Civil liability

A company may not be sued by its own employees [Compensation for Occupational Injuries and Diseases Act No. 130 of 1993] but labour hire and contractor employees may. In other words if they can proof negligence "on a balance of probabilities" they


would succeed with their claim. The onus of proof in a criminal case however is “beyond a reasonable doubt”. It would not be difficult establishing liability in a civil case should a company be found criminally liable. The suppliers and the designers of conveyor belts should take this into consideration when providing designs or conveyor belts to clients (also see our notes under manufacturers liability herein).

iv. Vicarious liability

Both criminal and civil liability may result in an employer or management being liable

MANUFACTURERS LIABILITY

- Any person who:
 - ✦ designs, manufactures, imports, sells or supplies any article for use at work.
- The article is safe
- The article is without risks to health
- When properly used
- Complies with all prescribed requirements
- Applies to articles installed and erected
- Applies to substances to be used at work
- Implications of section 21(2) agreements



for an employee's acts and or omissions.

Why is accident information not more clear?

- Right against self incrimination
- Civil liability
- Criminal liability
- Vicarious Liability

6. Understanding client's concerns when supplying information or products to them

Any supplier of a product, design or information to his clients must realise that he is legally bound to supply this safe and risk free when properly used. The definition of "reasonably practicable" is also referred to here.

Most companies are outsourcing non-core business and utilise experts in the field to perform the non-core business.

The suppliers of belt conveyors and designs of belt conveyor installations can therefore also be held criminally accountable for accidents in relation to these installations. If you are found criminally accountable you possibly face civil liability.

Suppliers should also guard against making incriminating statements ones an accident had occurred for example "poor maintenance" or failure to isolate". Should a consultant make such statement it will be presumed to be factually correct and may be used in court cases against them.

It has always been a principle of the Common law of South Africa that manufacturers of goods, which by their very nature are capable of causing harm, will not be held liable for the harm, which they obviously will cause if not used or handled correctly by the end user. A product is deemed inherently safe if used in accordance with the manufacturer's instructions. If the product is abused or not used properly by the end user, the legal convictions of the community do not dictate that the liability for resultant damages or injury must rest with the manufacturer.

There is no formal existing standards relating to the use of conveyor belts. There are general guidelines in terms of the MHSA, the OHSA and some DME recommendations, but nothing that summarises best practices for conveyors. There are several SABS codes relating to conveyer equipment i.e. flame retardant belting. During our visits we found that most mines have their own 'Codes of Practice' that refer to safety.

The Mine Health and Safety Act No. 29 of 1996, has however codified and placed certain duties and therefore, liabilities, on the manufacturer of articles. (The Occupational Health and Safety Act, No. 85 of 1993 has a similar provision)

SECTION 11: Employer to assess and respond to risk

11(1) "Every employer must-

- (a) identify the hazards to health or safety to which employees may be exposed while they are at work;
- (b) assess the risks to health or safety to which employees may be exposed while they are at work;
- (c) record the significant hazards identified and the risks assessed; and
- (d) make those records available for inspection by employees."

- Risk assessment is not a new concept, and the majority of companies and individuals carry out risk assessments on a daily basis. This does not only occur in a person's work environment but also in his/her private life. The Mine Health and Safety Act however, requires a systematic and formalised approach to risk assessment. The Act further clearly indicates that the risk assessment process is to be a continuous process and not a once off identification of hazards and subsequent risks in the workplace. The reason for this should be clear, as work conditions, machinery, processes, chemicals, technology etc. change on a perpetual basis and subsequently

also the innate hazards and risks faced by employers and persons who may be affected by the mine's activities.

The risk assessment and hazard identification that has been done is accessible by employees, health and safety representatives, union representatives, plaintiffs, the Inspectorate etc. This information is therefore not legally privileged and can be used in a court case against the company or individual. (see section 53 of the Minerals Act)

11(2) *“Every employer, after consulting the health and safety committee at the mine, must determine all measures, including changing the organisation of work and the design of safe system of work, necessary to-*
(a) *eliminate any recorded risk;*
(b) *control the risk at the source;*
(c) *minimise the risk; and*
(d) *in so far as the risk remains-*
(i) *provide for personal protective equipment*
(ii) *institute a programme to monitor the risk to which employees may be exposed.”*

- A methodical programme for hazard identification and risk assessment should be executed in order to eliminate, control or minimise the risk to which an employee may be exposed in performing work operations.

11(5) *“Every employer must-*
(a) *conduct an investigation into every –*
(i) *accident that must be reported in terms of this Act;*
(ii) *serious illness; and*
(iii) *health threatening occurrence;*

(d) *on completion of each investigation prepare a report that-*
(i) *whenever possible, identifies the causes and the underlying causes of the accident,...*
(ii) *identifies any unsafe conditions, acts, or procedures that contributed in any manner to the accident,..*
(iii) *make recommendations to prevent a similar accident,..”*

- Again we wish to stress to guard against incriminating employees and management when conducting investigations in terms of section 11(5)(c) especially if the causes as required by section 11(5)(d) must be identified.

7. Conclusion

One of the aims of the MHSa is self-regulation. It is also obvious that a national standard is required which will give the designers, manufacturers and operations some guidelines regarding the safe operation of these machines. This situation will be quite similar to overseas regulatory principles. There may be some resistance within industry but from the information available to us it is quite clear that the current situation cannot be allowed to continue. The old adage of “regulations are written in blood” may be quite true. Obviously such standards or regulations would be drafted within a tripartite consultation.

References and Acknowledgements

- i. SIMRAC
- ii. AATS
- iii. USA Department of Labor Mine Safety and Health Administration
- iv. Department of Minerals and Energy : Mine Health and Safety Inspectorate - RSA

CONVEYOR BELTS STATISTICALLY DANGEROUS
A.Bosman

- v. Mines and Aggregates Safety and Health Association – Canada
- vi. GEN 701 – Conveyor best practices
- vii. Fanie Nortjé Legal Consulting Services

-----oOo-----

Abridged Curriculum Vitae

Abé Bosman

1. I studied part time at the Rand Afrikaans University and obtained my law degree (B.Proc) in 1993.
2. Worked from 1991-1995 as a candidate attorney and attorney in the East Rand specialising in criminal and civil litigation. Joined International Risk Control Africa (IRCA) in 1995 as an in-house attorney and senior legal consultant. Completed a Modern Safety Management Diploma in 1997 through DNV.
3. I have been practising for own account since August 1995. Started Abé Bosman Attorneys in 1998.
4. The speciality field of Abé Bosman Attorneys are:
 - ✓ Consulting on Occupational Health and Safety as well as Environmental legislation;
 - ✓ Representing Companies in Inquiries and Investigations;
 - ✓ Representing Companies in Civil and Criminal Matters;
 - ✓ Presenting Seminars on the above issues;
 - ✓ Specialist Auditor on the above-mentioned issues.
 - ✓ In association with Riebeeck Venter Attorneys who perform our commercial and notarial work.
5. Client list include:
 - ✓ Anglo American Corporation
 - ✓ ENSR (USA Company)
 - ✓ Billiton Plc
 - ✓ PPC Cement
 - ✓ PPC Botswana
 - ✓ Iscor
 - ✓ Suprachem
 - ✓ Dorbyl (various divisions)
 - ✓ Avmin
 - ✓ ERF SA
 - ✓ Renfreight Circle
 - ✓ Barlow Ltd.
 - ✓ Town Council of Alberton
 - ✓ Afripack
 - ✓ Anglo American Platinum
 - ✓ DB Thermal
 - ✓ Mondipak
 - ✓ Sasol Alpha Olefins

-----oOo-----