Escalators: A hazard without status?

THE Factories Act 1961 states that: 'Every hoist or lift shall be thoroughly examined by a competent person at least once every period of six months and a report of the result of every such examination in the prescribed form and containing the prescribed particulars shall be signed by the person making the examination and shall within 28 days of the completion of the examination be entered in or attached to the general register.'

A statement of this magnitude does not appear for escalators nor for moving walkways where it can be argued that the passengers are exposed to moving equipment such as steps and handrails as well as the problems of gaining access onto and off the machine where various hazards are presented.

By David A Cooper CEng, MIIEXE, AIIRSM, LCG

The hazards associated with escalators are well known and have been documented in various forms including The Health and Safety Executive's 'Plant & Machinery' PM34 guidance notes entitled 'Safety in the use of escalators', The Health and Safety Executive have also issued a 'Plant & Machinery' guidance note (PM45) giving guidance on a period thorough examination.

Over and above the documents issued by the Health and Safety Executive there is the Fennell Report into the fire at King's Cross Underground Station in 1987.

It is my contention that the statutory inspection of an escalator would bring to light defects to the machine itself that could present a hazard. Such defects could include damaged components such as steps, comb plates, worn handrails, excessive gaps at pinchpoints, machine cleanliness and so on.

Rotation

Cleanliness, although not actually a component of the escalator, is an important part of a machine where continual rotation occurs and therefore friction can cause ignition of detritus. The Fennell Report clearly shows that there was grease and detritus on the running track of escalator no 5 after the fire at King's Cross. This is a typical problem that the statutory inspection should be designed to pick up and prevent. At the moment the law of the land does not ask for statutory inspections and therefore escalators all round the country may be in this condition.

'The Fennell Report clearly shows that there was grease and detritus on the running track of escalator no 5 after the fire at King's Cross . . . At the moment the law of the land does not ask for statutory inspections and therefore escalators all round the country may be in this condition.'

The Fennell Report also lists the 31 people who died as a result of the fire at King's Cross Underground Station, one of which was a seven year old schoolboy who was innocently in the wrong place at the wrong time.

There are escalator installed in many situations ranging from offices to public service areas, the majority of which receive maintenance inspections but the minority receive independent inspections by a competent person. The owner of the machine therefore has the dilemma of receiving maintenance reports but considering their contents to be commercially biased towards the maintenance contractor and therefore possibly ignoring the warnings, whereas an elevator owner should be receiving a statutory document to enclose or attach to the general register. Therefore the mathematics could add up to many more fires waiting to happen through uncleanliness of escalators.

Is it not therefore preferable that the law provides for statutory inspections of escalators where cleanliness would be checked by the competent person? Also, should the insurance companies who carry the fire risk on buildings where escalators are installed also be pushing for the law to require such inspections? The extent of the risk of King's Cross repeating itself cannot be known until statutory inspections are required—Do we have to wait for further tragic losses of life to occur before the law is changed?

Legislation

The Health and Safety Executive *PM34 document states in* section 6 (Legal Obligations) that escalators are not specifically covered in Health and Safety Legislation but however parts of The Health and Safety At Work Act 1974 apply which creates the responsibility onto the 'employer' or any organisation with control over premises to ensure safety. The majority of the people who fall into this category are not escalator engineers or competent persons trained in the inspection of escalators and therefore how will they know whether a machine is safe or not?

Inspections

The PM34 document goes on to say that by far the most accidents are caused by people tripping or falling and that such incidents may be associated with inadequate or incorrect lighting, poor judgement at entry/exit points, overcrowding, jostling etc. Certainly the design of a machine with respect to the passenger demand placed upon it would probably not be checked at an inspection as the machine would be barriered of out of use to the intending passengers but items such as poor lighting, poor quality of ride, and obstructed entry-exit points would be detected.

Trapping

The document also mentions the possibility of trapping and details six locations where trapping often occurs including, between steps and skirting, between steps themselves, between steps and combplates, handrail newel entry, between handrail and floor intersections and slack handrails. In one section they actually state that this would be caused by bad maintenance and a maintenance contractor is unlikely to point out his bad maintenance—this would be similar to carrying out an MOT on your own car! The maximum dimensions in terms of gaps between components are detailed in the document and also listed in British Standard 5656. These standards are rarely made available to field engineers who actually service the escalators which therefore means that we should be relying even less on the maintenance contractor.

The PM34 goes on to list precautions against falls and trapping and then states in section 39 that a 'responsible and adequately trained person should carry out inspections of the minor safety aspects of an escalator'—possibly even daily. It then states that in addition to *this a thorough examination* should be carried out every 6 months. However as stated previously this is not a legal requirement, but the PM45 document does give advice on how to carry out a periodic thorough examination.

This country relies on the escalator maintenance contractors to ensure that maintenance

is of a high standard. On the whole I believe that the standards of maintenance are reasonably good but in some cases escalators may not even be maintained except remedial actions to reinstate a failed machine. In other cases it cannot be expected that a maintenance company will undertake cleaning, replacement of worn components or adjustments when clients do not wish to pay for such items.

In America there is a campaign to reduce the number of accidents involving escalators which begins in the classroom where children are taught the correct way to use an escalator. This is a topic that needs looking at closely as we have no such programme in the UK, and therefore the inspection of escalators must also consider the users of machines.

It is very often visible in department stores on a Saturday morning that the mother of a small child is selecting clothing, the father is looking after the wheelchair and the offspring is going up one escalator and down the other! The child is potentially at risk throughout the whole scenario especially when getting on and off the escalator. If the child's clothing became entangled in the machine it may well be too late before the parents or onlookers could act. A problem that has been associated with small children is the plastic wellington boots that they wear becoming drawn into the gap between the steps and the balustrade. Many escalators are still in service with no deflector brushes or yellow lines at the sides of the steps and therefore, although much reduced, this problem can still occur and could be prevented by the owner being made aware of the problem at the time of a statutory inspection.

Women wearing high heels on escalators also expose themselves to the risk of entrapment. Open toe shoes expose themselves to the risk of trapping their feet at the comb plate sections as it has been known for the shoe to go under the comb plate and the toes to go above the plate. This could be prevented by the checking of gaps under the comb plate at a statutory inspection. Stiletto heels have also been known to become caught between steps when the step band straightens out for the terminal approaches. The gaps in the second scenario should be checked as per the guidance notes but excessive gaps could be a sign of chain wear which could present a greater risk if allowed to deteriorate.

Having gone so far with the issue of documents and with lessons learned it is my contention that escalators be made a statutory item specified in Acts of Parliament with similar status as elevators.

INSTITUTE NEWS

by Organising Secretary, Alison McIntosh

Risk Management Seminar

A COMPREHENSIVE Risk Management manual will be given to all delegates who attend the Institute's Risk Management Seminar at the City Conference Centre on Wednesday 25 November.

This useful loose leaf reference gives additional background information to complement the day's topics. The manual is not available for separate purchase.

There are still a few delegate places available. To reserve your place please return the booking form enclosed in this month's mailing or telephone the Organising Secretary on 081-741 1231 ext 205.

Members Update

N V W Abesenya AIIRSM has been appointed Acting Senior Safety Officer, King Fahd Industrial Port, Kingdom of Saudi Arabia.

Michael Allen AIIRSM has been appointed Project Safety Engineer, John Brown Engineering (Clydebank) Ltd, Keadby Power Project, Scunthorpe.

Roger C Lockwood DipSM AFRM MIIRSM is now Senior Health and Safety Consultant with Legal Personnel and Management Services Ltd, Shipley.

Colin Nichol MIIRSM has been appointed Health and Safety Co-ordinator with Strathclyde Regional Council.

U N Shenoy MIIRSM has been appointed On-Site Senior Safety Officer, Desert Line Projects, Sultanate of Oman.

Capt S J Harris MIIRSM Safety Manager with Swire Pacific Offshore, is now based in Singapore.

Bernard Clay MIIRSM now with Consolidated Contractors Co, SAL has been appointed Safety Manager of Massila Export Project, Sultanate of Oman.

Ronald W Brown MIIRSM has been appointed Senior Safety Engineer with Saudi Arabia Saipem, Dhahran Airport, Saudi Arabia and co-ordinates all health and safety activities on company projects in Saudi Arabia.

Cameron Jones DipSM MIIRSM is now Safety Engineer with British Rail Network South East, Euston Station.

Brian Roberts AIIRSM has been appointed Head of Security/Safety at Madame Tussaud's, London.

Correction: **Kenneth G Stow AIIRSM** has been appointed Health and Safety Officer with Tynedale Council, Northumberland.

Max Skinley DipSM MIIRSM has been appointed as the Safety Manager for the Marjam Project (Gas Compression Platforms)—offshore from Saudi Arabia and also a Fabrication Yard onshore—by Brown & Root (Gulf) Ltd.

. . . Future Update Meetings

DURING February and March next year IIRSM will be running a series of regional evening meetings to update members on developments of concern to occupational health and safety practitioners. Provisional venues are London, Birmingham, Manchester, Leeds and Glasgow. Further details, programme and booking form will be in next month's Newsletter.

Lecturers Wanted

THE Institute is building up a list of members who are trainers, lecturers and public speakers on specialist topics within health, safety and risk management and who would be willing to be engaged for future Institute seminars and workshops.

Please write, in confidence, to Alison McIntosh giving brief details of your specialist fields, previous speaking engagements and published papers.

We would also like to hear from any members who have training or meeting facilities at their disposal.

Institute gains eight new international members

BACK ROW, L-R: ZYGFRYD BRANSKI—Central Institute for Labour Protection, Warsaw, Poland. MOHAMED KAMRI H J IBRAIM—Brunei Shell Petroleum. JENNER MANGONTANG SIANIPAR—Pertamina, Indonesia. M HASAN RASYID—Pertamina, Indonesia.

FRONT ROW, L-R: EBRAHIM MOHAMMED HUSSEIN JAMAL—The Bahrain Petroleum Co Ltd. KEVIN W COLLIE—Bahamas Electrical Workers Union. THE REV MARTIN SMYTH MP—Host. JOHN BENNETT—Hon Secretary, Board of Governors IIRSM. BAMBANG WIDJANARKO—Pertamina, Indonesia. ZAID ALI MOHAMED BASHUEB—Ministry of Oil and Mineral Resources, Republic of Yemen.