

Accounting for staff following an evacuation

A risk assessment of methodologies, by Alan Lloyd.

Introduction

Years of development of health and safety legislation, codes of practice, and the successful implementation of these across industry have been instrumental in steadily reducing the frequency of full or partial building evacuations. Advances in building design and technology have also had a significant impact in this area. Over the years, however, society and the environment within which we work have undergone dramatic changes. Many organisations operate policies which make accurately accounting for staff difficult, at best. For example, groups of people huddled together near an entrance or exit to their building on a smoke break are commonplace in any city centre; a member of staff 'popping out' for whatever reason immediately causes inaccuracies with regard to who is believed to be on the premises; hot-desk working encourages an increased fluidity in building occupation.

In today's litigious world, businesses are likely to face legal claims from employees and other groups should their health and safety policies and procedures be found wanting.

Organisations now face a range of new threats which not only increase the likelihood of a building evacuation, but also the scale of the evacuation, and therefore traditional approaches are no longer sufficient.

In metropolitan areas one of the most significant challenges when executing an evacuation, is the uncontrolled dispersal of staff following the evacuation.

With rigorous training and regular practice, staff can be directed to muster for a traditional roll call. However, in a real life evacuation people's natural instinct is to take flight from a threatening situation whether real or perceived.

If a real evacuation becomes a requirement, many organisations find it extremely difficult to account for their staff.

Methodologies

There are two basic methods typically employed by companies when accounting for staff following a building evacuation:

Manual mustering

Manual mustering is by far the most common approach employed. Personnel are guided to external, pre-identified muster points which they are familiar with from the numerous drills undertaken during the normal course of work. The benefits of this approach are that it is very easy for staff to follow, the cost of employing such a system is low and it is a process that is familiar with everyone in the workplace.

However, there are many intrinsic weaknesses in this approach. The system relies on a small number of trained personnel to undertake the subsequent roll call. These individuals are themselves evacuees and as such may not have the presence of mind to carry out their duties in a real life evacuation; in the extreme case they may not be available.

The manual mustering system also relies heavily on staff following procedures, however, when an actual evacuation takes place the primary focus of the individuals involved is often solely for their own safety. The system that performed adequately during drills may therefore significantly under perform.

The manual mustering system makes use of a number of identified mustering points close to the building facing evacuation. In a large scale event, access to these areas may either be

denied or extremely dangerous thus rendering the carefully practiced procedures impossible to follow. In this event the natural reaction of employees is to rapidly disperse.

Paramount to the effectiveness of this system is knowledge of who was in the building at the point of evacuation. Very few organisations have the ability to explicitly identify who is on the premises at any given time. All but the most sophisticated access control systems are flawed, typically by staff's lack of diligence in maintaining accurate records.

In response to some of these challenges a number of technology based access control systems have been developed.

Access control systems

A number of sophisticated access control systems which can be linked to fire detection systems are now available. In the event of an alarm being activated, or on demand, a roll call list can be quickly printed.

Ever more sophisticated systems are emerging using Radio Frequency Identification (RFID) technology which automatically logs members of staff in and out of a building, under normal conditions, using remote sensing technology.

However, these systems always 'fail to safe', allowing unimpeded egress from a building without the sensors registering those who pass.

All access control systems, although sophisticated and extremely capable, have many of the same risks associated with manual mustering. In addition, they also introduce further risks inherent in many technology based systems.

Most access control systems, however advanced, still rely on physical muster points. These locations may not be accessible following an evacuation and therefore cause confusion for staff and, worse, an inability to successfully verify the evacuation of individuals.

Access control systems all rely heavily on the use of technology and power at the building being evacuated. This raises the issue of whether the access control system installed is fully fire hardened and is designed to operate using resilient power technology. Many access control systems make use of PC technology, once again posing the question "is the processing, storage and network designed with resilient capability?"

Virtual mustering

If the main risks raised by manual mustering and access control systems are the use of physical muster points that may not be available, small numbers of trained and disciplined staff to conduct roll calls and a total reliance on technology and power at the evacuated building, then surely both methodologies introduce risk into a process through inherent weaknesses in their design.

A 'virtual mustering system' based on a crisis communications system can help address the risks of both manual mustering and access control systems.

Virtual mustering systems must make use of communications management and distribution technology, situated at a remote, geographically separated location. The technology used needs to be resilient and scalable to deal with many potential situations. It must also be simple to use and employ ubiquitous, non location dependant technology. Key to a virtual system is its ability to provide simple, rapid and accurate reporting information to any number of relevant parties.

A virtual mustering system would only be used concurrently with the more traditional methods assessed above. It is a complementary aid, not a replacement. Such a system can be used to manage and rapidly communicate any unexpected changes to the muster point,

allowing evacuees to disperse to any suitable safe location. This could be based either on direction received from the emergency services or a self assessment of the situation at hand. Upon arrival at the muster point staff are able to use the crisis communications system to simply and quickly confirm their evacuation status.

A virtual mustering system also comes into its own should there be staff who are unaccounted for by conventional means. In this case the crisis communications system can be used to proactively attempt to make immediate contact with these people and ensure that they verify their evacuation status.

**Alan Lloyd is commercial director of 247i Limited telephone: 0870 990 9833
email: alan.lloyd@247i.co.uk**

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