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In our June edition of the newsletter we report on a look ahead to whether computer keyboards will still be around in 20 years. There is an article on initiatives to ensure worker involvement in managing workplace risks, and management responsibilities are highlighted in emerging reports into the Buncefield oil storage facility explosion.

An end to the computer keyboard?

We know that computer keyboard use is associated with a variety of musculoskeletal disorders (MSDs), and that MSDs are the most common type of work-related illness in the UK. According to the Health and Safety Executive statistics, keyboard work was associated with 14% of reported MSDs. Computers are being adopted increasingly in a knowledge-based economy, and are now commonly used by young children in schools. Alternatives to standard keyboards such as mice, touch screens, use of a stylus, and different varieties of keyboard layout still require physical input from the user to work. So long as the user is required to make a physical action to use the computer there will always be some level of MSD risk attached to use of the input device.

According to the Pentagon's scientific research agency in the US, instead of keyboards we will be using headbands to interact with computers within a generation. Experiments using EEG (electroencephalographic) recording equipment worn in an 'electrode cap' have used brainwaves to identify which letters are being looked at by a person focusing on characters displayed on a screen. Each sentence created currently takes a lengthy 5 – 10 minutes to produce, but the Pentagon believes that technological advancement will mean that the mental typewriter will become commonplace over the next 20 years.

One might wonder what the ergonomic implications will be. Reduced exposure to MSD risks is likely: the technology would appear to leave the user with nothing physical to do but to sit still. We know however that psychosocial factors can play a large part in MSD prevalence, and that less active sitting postures are likely to carry a risk of discomfort.

Speech recognition software is developing all the time, with some mobile phones even providing speech-to-text. It is unlikely to be practical however to have office staff routinely compiling reports using speech, simply because of the noise disturbance this would create. Touch screens, handwriting recognition, voice input and the headset operated word processor will all bring alleviation from some MSD risks but might introduce others. None is likely to have much impact on psychosocial risk factors which are likely to be caused in part by the organisation of work. These considerations mean that the most prudent approach to adopting new input methods such as these is to avoid over-reliance on any one, and make use of the flexibility they provide as a group. Whether headsets will replace the keyboard within 20 years is not certain: individuals and workplaces might be reluctant to change. It might be some time before carrying out computer work and being able to knit at the same time are commonplace.

Consultation and engagement at the workplace

The HSE places great importance on worker involvement and consultation, which it says has proved to be a significant aid to improving health and safety in the workplace. The emphasis is on industry-regulated participation in consultation to ensure that risks are identified and managed, in preference to increasing legislation. There is a risk however that if adopting good practice measures to manage health and safety is essentially voluntary, there are some firms and perhaps some industrial sectors where uptake will be low, and only a statutory duty to consult and act will really make a difference.

Good dialogue between management and the workforce regarding workplace risks is to be welcomed of course, though it is worth noting that in our consultancy work we sometimes see worker ownership of health and safety being encouraged and emphasised to the point where senior management no longer has the leadership role or a clear enough overview of how well risks are being managed.

Some risks can only really be addressed by management, particularly if they involve organising work differently, or purchasing equipment such as lifting aids. Cost benefit analysis of ergonomic interventions can probably only be done with management backing and resources. Indeed, one of the best predictors we have found for low musculoskeletal disorder rates in a company is where the workers feel able to come forward with issues, concerns and ideas.

To support safety reps in their work, the HSE has created a resource which can be found at

http://www.hse.gov.uk/workers/safetyreps/index.htm

Buncefield Major Incident Investigation Board Publish Recommendations on the Design and Operation of Fuel Storage Sites

The fifth report into the Buncefield explosion and fire was published recently. The five main areas in the Design and Operation Recommendations report are:

- The need for systematic assessment of the level of inherent safety required at sites;
- The need for high integrity systems to protect against escape of fuel;
- Preventing escalation of loss of primary containment incidents and preventing harmful substances from causing a major accident to the environment;
- Operating major hazard sites with high reliability organisations; and
- Improving culture and leadership to deliver high safety performance

There are many similarities in the Buncefield report's findings to those in the Baker Report which examined the 2005 explosion and fire at the BP Texas City refinery. Recommendations on process safety leadership, process safety culture, performance indicators, independent monitoring, industry leadership, engineering practices, safety knowledge and industry competence were made in both cases.

Personal injury rates, for example, should not be taken as an indication of process safety; they are not necessarily related. Root cause analysis of failures must be sufficiently rigorous. Also, there was poor follow-through of reviews and audits. As noted in the Baker Report, the failure to follow through compromises the effectiveness of even the best audit program or incident investigation.

For the report and further details, visit http://www.buncefieldinvestigation.gov.uk/index.htm further info.

Ergonomics and health and safety reports available for free download

The Ergonomist, the newsletter for the ergonomics profession, provided a link to more than 1000 research reports made available from the Canadian health and safety at work organisation IRSST. These can be found at http://www.irsst.qc.ca/en/home.html. We thought we would include the link here to bring it to a wider audience.

Hu-Tech welcomes new member of staff

In April, we were pleased to be welcome Lillian Antonio to the team. Lillian joins us as a consultant, having worked previously with Lloyds Register Rail. Lillian has a BSc in Ergonomics from Loughborough, and to date her experience is principally in the rail and maritime environments. We hope that many of you will get the chance to meet and work with Lillian soon.