

Is PPE working for women?

The problem of ill-fitting personal protective equipment for women in industry

In the second article in our 'Women in OH' series, Rebecca Ghani considers if personal protective equipment for those working in hazardous industries is working for women, and asks what needs to change to keep women safe at work.

RECENT research¹ has shown that women working in hazardous industries often do not have access to correctly fitting personal protective equipment (PPE) – and in some cases the PPE can hinder rather than protect. While the issue is beginning to be acknowledged and addressed by some employers and manufacturers, researchers are now calling on industry to do more to protect women effectively.

Those working in hazardous or high-risk industries rely on PPE to protect against hazards at work, ranging from respiratory and dermal PPE to protect against transmissible diseases, chemicals and radiation; to equipment to protect against physical injury, such as hard hats, reinforced boots and stab vests. As well as meeting quality and safety standards in terms of the material and design, fit is crucial to ensure the PPE is effective.

Many of the industries requiring PPE are male dominated. In the UK, only 11% of the construction workforce is female and this falls to just 1% when looking at workers on site². In engineering, only 9% of the workforce is female³. And just 30% of police constables in England and Wales are female⁴.

Women already bear the burden of gender bias in terms of issues such as unequal pay and sexual harassment in the workplace. In 2015 there was a 19.2% pay gap between male and female employees (9.2% for full-time employees⁵); and a survey carried out in January 2016 by the TUC found that 52% of women had experienced sexual harassment at work⁶. (The TUC reports that women are almost three times more likely to suffer sexual harassment than men.)

Industries such as construction have a long way to go to achieve a workforce which reflects the 50.7% female UK population⁷ or even to match the 47% female representation of those in work in the UK generally⁸. Discussing the lack of female representation in the construction industry, the chief executive of the Construction Industry Training Board said: 'You only have to look at the figures to see what a mountain the [construction] industry has to climb: less than 2% of the manual workforce is represented by women.'⁹

As well as these cultural and institutional challenges for

women in industry, one of the more practical, immediate effects of this institutional bias is the lack of properly fitting PPE, which is conventionally procured based on the needs of the majority male workforce.

BUILT FOR MEN

Poor access to appropriately fitting PPE has been highlighted in a recent study of female construction workers in the *American Journal of Industrial Medicine*¹⁰.

Female labourers, carpenters, and ironworkers took part in semi-structured focus group interviews in 2014 in New York City. The majority of participants reported fit problems with many types of PPE, including gloves, harnesses, safety vests, work boots, outerwear. The general observation was that the equipment provided was too large. 'Other emergent themes included female workers purchasing their own PPE, exposure to various safety hazards from poorly fitted PPE, and perceived indifferent safety culture,' states the report.

Quotes from the female workers at the focus groups included:

- 'Generally, [employers] get one size: large. And then I have to beg them "Can I get a small [harness]?" And it just never happens.'
- '[Employers] don't consider us, period. What they order, they've done forever. They place an order and it's for the men. And they don't stop to say "You know, we have two [women] on this job, let's order a little something different for them." They don't think of us, we're not here. There could be 20 women on the job and [they] still [won't order for us].'
- '[This harness is] not made right and you [have] to duct tape it so the chest [strap] doesn't slide up every 30 seconds and choke you.'
- 'You have to adjust [the outerwear]. You have to cut part of the legs, or part of the arms off because they're just too big most of the time.'

The authors conclude that female construction workers have difficulty accessing properly fitting PPE that is designed for women. 'Improperly fitting PPE can be detrimental to safety, productivity, and the

employer–employee relationship. Regulatory agencies, manufacturers, employers, and unions need to recognise the issue of inadequate fit and should promote better design, distribution, purchasing, and supply of PPE for workers that require equipment that may be different than the traditional standardized models,' they state.

In the UK, the *Personal Protective Equipment at Work Regulations 1992* (as amended) (PPE Regulations) impose a duty on employers to provide suitable and correctly fitting PPE. Among other requirements, PPE must be 'capable of fitting the wearer correctly, if necessary, after adjustments within the range for which it is designed' and, so far as is practicable, 'prevent or adequately control the risk or risks involved without increasing overall risk'.

Although the law is clear, recent research shows that, as in the US, UK industry implementation does not always match up to the legal requirement to provide suitable PPE for women.

A survey – carried out in May 2016 by the trade union Prospect, Women in Science and Engineering (WES), the Trades Union Congress (TUC) and the Institution of Mechanical Engineers (IME) – found that ill-fitting or inappropriate PPE for women is a widespread issue¹. It follows a 2009 survey by WES which found that ill-fitting PPE for women was common but was often accepted as 'part of the job'. The 2016 survey shows that although some items of PPE had improved since 2009, progress had been far too slow. However, respondents to the most recent survey were now 'less inclined to accept uncomfortable and unfit PPE as their lot'.

Responses were received from 3,086 women aged 20–59 years from across industry. Overall, 57% said their PPE sometimes or significantly hampered their work. Three quarters (73%) of women in the emergency services said their PPE sometimes or significantly hampered their work; in particular they highlighted the unsuitability of body armour, stab vests and high-visibility clothing. Less than one-third (29%) of respondents reported that the PPE available at work was specifically designed for women. Respondents working in research and development reported the most comfortable PPE; emergency services personnel reported the least. Just 1% of respondents had worn PPE specifically designed for maternity during their pregnancy. Just over one-quarter of respondents (28%) reported that they had been subjected to unwelcome – mostly derogatory – comments as a result of ill-fitting PPE.

Comments reported in the survey included:

- 'You look like a kid playing dress up'
- 'Can you breathe in that?'
- 'Are you wearing your dad's clothes?'
- 'Here comes the elephant'
- 'Your boobs look big in that'

Ingrained bias and the 'everyday sexism' that can still be a factor in some of these male-dominated industries appears to hamper directly addressing the problem of ill-fitting PPE. The report's authors say: 'The problems faced by our respondents with their PPE to some extent reflect the wider challenges faced by women working in male-dominated industries ... In male-oriented areas of work women are already facing an uphill battle and when they "start making a fuss about PPE" it is seen as being disruptive and going against the ethos of the existing work culture.'

A respondent commented: 'In these circumstances larger men's sizes are often the only thing available – which makes women look ridiculous.' The report also states that women are concerned that if special orders have to be made [for correctly fitting PPE] that would take additional time to organise and 'it makes you feel like you are being a nuisance'.

THE UNION VIEW

Occupational Health [at Work] spoke to Sarah Page at Prospect about the survey results. 'Clearly what's powerful about the research findings are the number of people who aren't happy, and the opportunities that this brings us,' she says. Page makes the point that the issue is not with the law itself, but with how it is implemented. 'I would say that if you look at the regulations and the guidance, there is of course the expectation that workers are properly consulted and involved in the selection, and given structured training,' she says.

When asked whether, in these cases where PPE hampers rather than protects, workers should be able to elect not to work, Page says: 'A worker shouldn't ever have to find themselves in a position of feeling like they want to refuse work [because of their PPE].' She adds that the emphasis should be on the employer following the law and ensuring workers are properly consulted, involved and trained – rather than the burden of responsibility falling to the worker.

Do men have similar issues with PPE? Page says that while the survey was for women, 'men will have some of the disgruntlement as well. We accept that. But they won't be subjected to the same level of disparaging remarks or unpleasant comments that women are subjected to'.

Page also points to the role of occupational health (OH), which she says is well placed to highlight the importance of well-fitting PPE to managers and to help employers follow the law. In particular, she says, OH should be involved when workers have existing health needs. She gives an example, cited in the survey, of women who had had mastectomies and found protective stab vests to be uncomfortable. 'The guidance to the regulations is sensitive to this,' she says.

Paragraph 40(d) of the HSE guidance on the PPE Regulations¹¹ states that the employer should 'consider the

health of the person wearing the PPE and its ergonomic effects'. And at paragraph 41 it adds: 'The aim should be to choose PPE which gives maximum protection while ensuring minimum discomfort to the wearer, as uncomfortable equipment is unlikely to be worn properly.'

Improving PPE for women should not be thought of as only being of benefit to female workers, says Page. 'We know from the work that some of the unions have done – particularly around toilet breaks and toilet facilities – that when improvements are made for women, men benefit too. So there can be real merit in men and women working together even if it might be a female campaign: the men will benefit,' she says.

Making these industries more attractive to women – including getting the PPE right – also benefits the industry as a whole in terms of helping to ensure a more effective workforce from a larger pool. According to Page: 'There's no doubt that the issue is very serious for women. As the survey shows, in some instances [the PPE issue is] undermining women, deterring women or even making them step out of a particular role. But it's not just bad news for women and for opportunities for girls who are looking to enter some of these industries. It's absolutely counterproductive for these industries as well because they've got an ageing workforce, a skills challenge and recruitment problems. If they make it unattractive to half the population then they're doing a disservice to their organisation's potential.'

TRANSPORT FOR LONDON

One employer that has been responding to the PPE needs of women at work is Transport for London (TfL). After running a trial in early 2015, it launched a range of safety clothing designed specifically for women in December 2015. *Occupational Health [at Work]* spoke to TfL to find out how the initiative was developed.

'Universally sized PPE, which is typical across the engineering and construction industries, presents sizing difficulties for female staff,' a TfL spokesperson said. 'Feedback from a six-week trial we ran last year indicated that many women have for years resorted to safety pins or rolled up trousers to get a decent fit, in clothes that can restrict their movement. Poorly fitted PPE can also pose a trip hazard. The new women's specific safety clothing, which was selected after carefully reviewing feedback from staff, is more comfortable and removes unnecessary distractions from the job at hand. The new PPE footwear also helps to reduce damage to our staff's feet: from short-term problems like blisters, to longer-term problems such as back pain and joint pain.'

Female staff feedback on TfL's range of PPE designed for women included:

- 'It is a pleasure to finally wear a jacket that fits, after 11 years of working on site' – engineer

- 'We've even managed to get some size 2 boots for my teeny tiny feet, so I won't need to wear hiking socks in the middle of summer!' – health and safety manager

- 'Finding PPE that fits has always been a challenge for women in engineering, whether it's rolling up sleeves, holding up trousers or having to wear multiple pairs of socks just to keep our shoes on. A one-size-fits-all approach for men and women hasn't worked, which is why it's great to see TfL taking a lead in this area. Taking part in the trial to source new women's PPE has been enjoyable and has resulted in comfortable clothing that allows us to move more freely and work more effectively' – project manager.

The London Transport Museum has added items from the women's PPE trial to its permanent collection.

EMERGENCY SERVICES

The Police Federation of England and Wales (PFEW) is another body that aims to ensure its PPE is suitable for its female workforce.

Occupational Health [at Work] spoke to Jason Kwee, chair of the health and safety sub-committee for the PFEW. 'All PPE goes through strict testing criteria, to set standards, by the Centre for Applied Science and Technology,' he says. 'All testing is done in consultation with working groups that contain operational officers and members for the Police Federation.'

Can PPE be specifically tailored for women? 'Yes, items of clothing, for example high-visibility jackets, have a range of sizes to cater for female officers. With regards to body armour, there are 'formed' front panels that will accommodate the shape of female officers.'

As well as keeping officers safer, correctly fitting PPE is a good investment. According to Kwee: 'Police officers tend to join the service for the long term, and such investment in properly fitted PPE makes good business sense. Problems can occur when an officer changes shape, in gaining or losing weight, and do not get their kit refitted to the correct size.'

'In general, if PPE is properly fitted, worn and used as prescribed, then it should reduce the risk to officers. There is a danger that if the PPE is ill fitting or uncomfortable, this will tempt the officer to remove it and that may, of course, put the officer at an increased risk,' says Kwee.

He adds that there is ongoing research into improving PPE for women. 'There is continuous research in this area, and a current piece of work part-funded by the PFEW, is looking at the effect of both wired padded bras and sports bras on the shape of the bust and the subsequent comfort and effectiveness of the body armour,' he says.

RESPONSE FROM THE MANUFACTURERS

The International Safety Equipment Association (ISEA) is a manufacturer members' organisation in the US that

also sets standards in PPE and PPE technologies.

Occupational Health [at Work] spoke to ISEA president, Daniel Shipp to get the manufacturers' perspective on PPE for women.

'In the US, there's official recognition of the importance of fit for PPE,' says Shipp. 'That hasn't always been the case. At the urging of ISEA and other organisations, the Occupational Safety and Health Administration (OSHA) issued a proposal in October [2106] to amend its regulations on PPE in construction to include a requirement that PPE must be "selected to ensure that it properly fits each affected employee".'

Shipp explains that PPE products such as chemical protective suits, high-visibility garments, fire- and flame-resistant gear, head and eye protection, gloves, footwear, respirators and fall-protection harnesses are available in a wide range of sizes, 'some specifically designed with women workers in mind'.

Shipp also claims that manufacturers have responded to the needs of women in industry. 'If there is a continuing problem with women not getting properly fitting PPE, it may be because employers aren't aware of what's available,' he says. 'Manufacturers respond to market needs, and ISEA has worked for years to promote the recognition that there is PPE sized and designed for female workers.'

When asked if men also have issues with ill-fitting PPE, Shipp says: 'I think the answer is yes, to the extent that men also come in different sizes and shapes. Again, a more diverse workforce demands PPE to fit a wider range of body types, and manufacturers respond with products that fit. It's important that employers understand that ill-fitting PPE can create hazards as well as discomfort.'

MAINTAINING THE MOMENTUM

Although the PPE regulations mandate the use of properly fitting and appropriate PPE, the survey by Prospect, the TUC, WES and the IME shows that – for women at least – their implementation is falling short of providing effective protection and in some case, introducing new risks.

The momentum from the results of the survey must be maintained, says Page of Prospect. 'People shouldn't be facing these difficulties and dilemmas, so something radically needs to be done to make sure that there is a conversation between employers and manufacturers but also a return to just looking at what the regulations say, and complying with them. Most of these complaints boil down to non-compliance,' she concludes.

There is an important role for OH in ensuring that ill-fitting PPE is recognised as a serious health issue and helping employers comply with the law by properly consulting their workforce. According to Page: 'Occupational health has the opportunity to get involved and – where trade unions are recognised – work with

CONCLUSIONS

- **Employers** have a legal duty to provide suitable and correctly fitting PPE
- **Two** recent studies (US and UK) have found that women often do not have access to correctly fitting PPE; that they face difficulties in raising this as an issue with employers; and that they often encounter derogatory comments from male colleagues about their poor-fitting PPE
- **OH** is well placed to highlight the importance of well-fitting PPE to managers and to help employers follow the law
- **Making** male-dominated industries more attractive to women – including by ensuring they have appropriate PPE – benefits women, but also their male colleagues, and the industry as a whole in terms of helping to ensure a more effective workforce from a larger pool
- **Transport for London** (TfL) launched a range of safety clothing designed specifically for women in December 2015

safety reps to help engender the conversation. Reps can help broker the conversation and make sure that people are speaking up. And give the workforce some voice in all of this.' ■

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Notes

- 1 *Women's PPE: One size does not fit all*. London: Prospect, 2016. ohaw.co/2hRbJC6 [accessed 24.11.16]
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- 3 *Useful statistics*. Women's Engineering Society. wes.org.uk/statistics [accessed 24.12.16]
- 4 *Police workforce, England and Wales, 31 March 2016*. Home Office. ohaw.co/2hAWonq
- 5 *What is the gender pay gap?* London: Office for National Statistics. 2016. ohaw.co/2hVTEQB [accessed 16.11.16]
- 6 *Nearly two in three young women have experienced sexual harassment at work, TUC survey reveals*. London: Trades Union Congress. ohaw.co/2hW2kgw [accessed 29.11.16]
- 7 *Population, female (% of total)*. NW Washington, DC 20433 USA: World Bank, 2016. ohaw.co/2hVZBwN [accessed 23.11.16]
- 8 *Employment and employee types*. Office for National Statistics. ohaw.co/2hAWji4 [accessed 24.12.16]
- 9 *Construction suffers when it ignores diversity*. Norfolk: Construction Industry Training Board, 2013. ohaw.co/2hQXmoz [accessed 06.12.16]
- 10 *Onyebeke LC, Papazaharias DM et al. Access to properly fitting personal protective equipment for female construction workers*. *American Journal of Industrial Medicine* 2016; 59:1032–1040.
- 11 *Personal protective equipment at work (third edition)*. London: Health and Safety Executive, 2015. ohaw.co/PPEatWORK [accessed 20.12.16]