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The quest for global health, safety and emergency response training standards in the oil and gas industry



Beyond the Barricades



ABERDEEN BUSINESS SCHOOL
ROBERT GORDON UNIVERSITY



Beyond the Barricades: the quest for global health, safety and emergency response training standards in the oil and gas industry

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Executive Summary

An independent study, covering senior leaders in sixty companies across the globe, was conducted by the Aberdeen Business School at Robert Gordon University, to assist OPITO in exploring how internationalisation impacts on emergency response and basic safety requirements in the oil and gas industry. The major findings relate to the barriers that exist for companies in achieving consistency and effectiveness in training delivery, competency and behaviour change. The research team identified a number of overall conclusions regarding the challenges for the industry at present:

- Most health and safety and emergency response (HS/ER) training enhancements had been developed reactively in response to high profile incidents and/or legislation change;
- Only one company cited their moral obligation to employees as being a driver for training programme development.
- There was believed to be significant variation in training standards regionally with regional standards largely felt to be of a lower calibre than international standards.
- There are difficulties in assuring consistency of training quality globally due to the myriad of standards current in the industry.
- Competency was not necessarily being delivered by training with training not infrequently being seen as a “tick box” exercise.
- Employees at every level need to take ownership and engage with HS/ER philosophy at all times.
- Leaders need to be seen to embrace its importance, guiding their employees into a safer future working environment.
- There should be extensive communication and consultation with all key stakeholders involved in the industry globally in order to ensure that a framework of common global standards be developed that is effective, consistently applicable and capable of independent and objective benchmarking.

There was overwhelming support for the development of global guidelines or frameworks in relation to HS/ER training: however, it was very strongly articulated that these must be flexible to the local operating environment, and should be demonstrably international, not just an extension of UK based models.

Introduction

In its drive to improve global safety and competency standards in the oil and gas workforce, OPITO International commissioned the Aberdeen Business School at Robert Gordon University to undertake an exploratory and independent research project, the focus of which was to explore how internationalisation impacts on emergency response and basic safety training requirements.

The project aimed to generate an in-depth understanding of:

1. the variety of ways in which emergency response and basic safety training is being delivered and how it adds value to companies operating internationally in the oil and gas industry;
2. the means that are used, or might be used, to measure the value of this training; and
3. the significance for companies of the development of international standards against which training achievements might be benchmarked in assuring both the companies and their stakeholders that capability and competence are displayed by their workforce.

The higher profile resulting from the Gulf of Mexico disaster has shone a spotlight on industry performance as the focus of global media and political attention, branded as:

'one of the lessons we've learned from this spill is that we need better regulations, better safety standards and better enforcement ... but a larger lesson is that no matter how much we improve our regulation of the industry, drilling for oil these days entails greater risk.'

(President Obama. June 15th, 2010)

In order to gather rich data from a wide range of oil and gas companies the project was designed as a qualitative study drawing upon a series of extended telephone interviews. In total 60 companies with headquarters and operations across the globe took part in interviews lasting from thirty minutes to over one hour (figure 1).

Figure 1: Map of Participant Head Quarters and Operating Regions



Companies participating ranged from micro organisations to large scale multi-nationals employing over 30,000 staff and contractors covering: exploration and production; drilling; construction; oil field service providers and training providers. Interviewees were primarily senior leaders in the organisation with responsibility for HS/ER and training issues, including: Chief Executive Officers, Global Training/Competency Managers, Senior HR Managers and Corporate HSE Managers.

The interviews were highly revealing with the majority of respondents prepared to talk openly about the issues within their organisations and the industry as a whole, although they were more guarded about specific failed training programmes.

Previous academic research into health, safety and emergency response training is somewhat patchy, focusing on, for example, specific aspects of emergency response training such as the identification of the key skills that should form the content of programmes of crisis response training, *'namely decision making, situation awareness, communication, leadership, and teamwork, all of which can be affected by stress, as well as organisational factors that influenced the outcome of the incident'* (Crichton, Lauche and Flynn, 2005). This study found that poor leadership in a critical incident could materially exacerbate the situation and result in very poor

public perception of the company involved, arguing the need for further debate on and refinement of programme content. Other research, such as that of Kane (2009), broadens the scope of what might have traditionally been regarded as high risk operating environments and considers what the implications are for the content of training programmes.

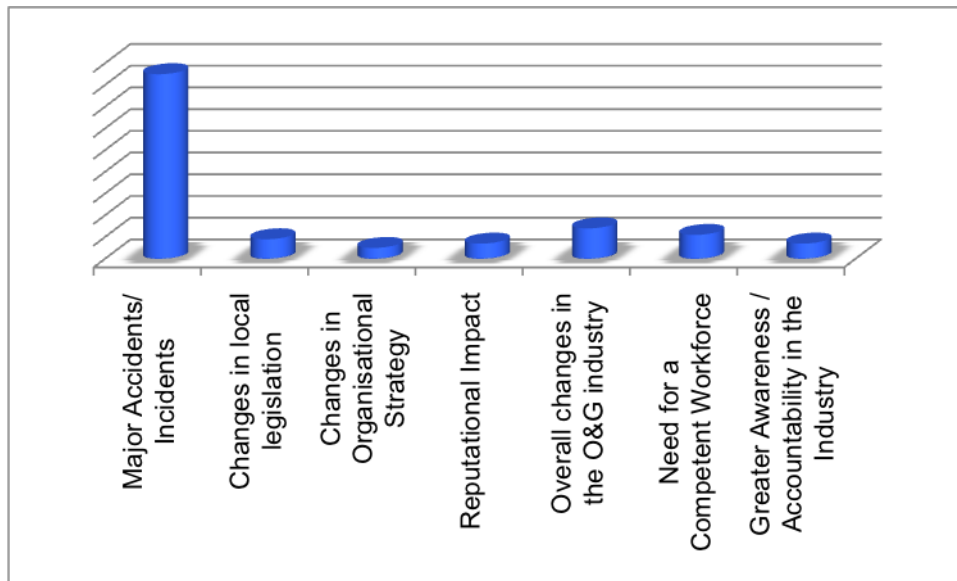
This is a timely and important topic as testified by the willingness of senior managers to participate in the research project. Participants were open and forthcoming, with the majority view being that it was impossible not to deliver HS/ER training. As one manager commented *'events such as [Brent] SPAR, Piper Alpha and GoM have communicated incompetencies & inconsistencies of our industry's HS/ER culture to a global audience and of course in some cases directly impacted share value for specific companies involved in these incidents'*

How important is H&S and emergency response training?

Companies regard HS/ER training as crucial or highly important to their corporate strategy, with the generally accepted view that its importance had steadily increased in recent years. However interviewees were far less confident that the training was delivered well.

When asked why HS/ER training had increased in importance many cited issues such as the Gulf of Mexico disaster and other high profile incidents, either recently or as far back as the Piper Alpha disaster in the North Sea. Figure 2 highlights the extent to which the strategic enhancement of HS/ER training has been reactive to and dependent on such high profile, high risk incidents.

Figure 2: Drivers Influencing Perceived Importance of HS/ER Training



'The biggest difficulty you face in this industry is that whilst nothing is going wrong everybody is happy..... I'm sure for the 10 years prior to Piper Alpha everyone was quite happy working the way they were..... and it is only after a major incident that suddenly things start to come out....'

The overwhelming significance of high profile incidents was somewhat surprising for the research team and although this may well have been affected by the huge media frenzy around the recent Gulf of Mexico incident, the degree of importance these seem to have would appear to be disproportionate and would not be reflected in decisions about other kinds of staff development or training programme, such as technical training, where decisions would typically be made on other grounds. This theme of reacting to or reflecting on incidents was one that pervaded the interviews.

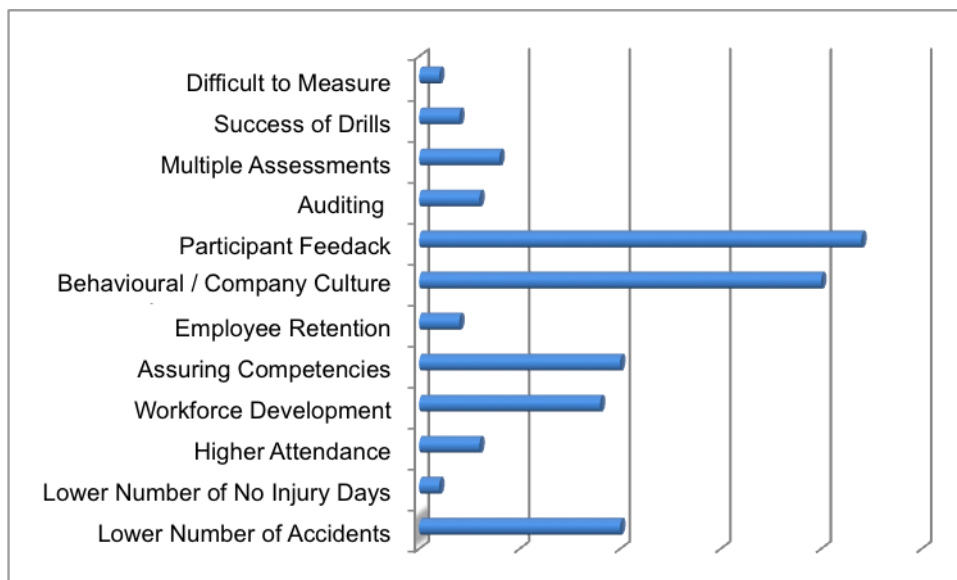
'You've had an accident, you look at the analysis, find out what caused it, what would have prevented it, or if an accident did happen what would have stopped it getting out of hand. And unfortunately a lot of the training has been developed because people have been killed.'

The quality and effectiveness of training

When asked about examples of successful training initiatives many of the respondents talked about the need to base standards around the local context of the regions in which they operated, along with evolving the scenarios used to keep programme content fresh and interactive. Others spoke about successful programmes being based on competency approaches.

When the interviewers sought to explore the success measures used in evaluating training participant feedback – a very subjective measure - was most frequently cited (figure 3).

Figure 3: How Impact of Training is Measured



A significant number also talked about the impact of training on employee behaviour: however, respondents found it difficult to provide evidence of how behavioural/cultural changes were measured objectively. The following quote illustrates both how important behavioural change is and how intangible.

'I've seen one example of an individual that I didn't trust when I first met him a couple years ago do some things where he directly took on senior management and our client around a certain safety related issue, he was right in the interpretation of it. He stood his ground on it, and didn't succumb to the pressure, did exactly what we want our field leadership to do. He probably averted a very high risk situation because of what he did, and I'm certain he would not have done that 3 years ago. Whereas earlier this year he said "no-one will expose my crew to that risk and I'm going to do something about it" and he did. Every step he took was exactly what we've been trying to drum into these guys now for a couple of years, and I saw him do it!'

Companies also use three major approaches in measuring training effectiveness: (1) incident reporting; (2) review of team performance; and (3) audit. There were also a significant number who openly acknowledged that they did not gather metrics, found measurement too difficult to quantify and/or that they felt that metrics could be improved, in particular in terms of gathering evidence of less tangible value adds of improving HS/ER performance. This would appear to be an important area for further research.

'Given the fact that I'm sitting here thinking that I've never seen one that can clearly demonstrate the benefits, they are probably not that robust as it stands right now.'

'The problem is there is not enough understanding in the correlation between training and incidents or accidents. It is very difficult to prove. It is very difficult to prove why an accident happened.'

'It's a subjective situation in that we manage it effectively, efficiently and speedily. So it's not a metric as such, it's not measured by something either statistically or numerically calculated it's subjective'.

Equally measuring the costs of HS/ER training was difficult for most with the only 'hard' measures' being the actual costs of delivery and allocated staff hours spent in training, while others based it around the budgets they have in place. When asked how they estimated the costs of not training participants found it very difficult to reply and the few that did talked about the fact that they simply did not measure this, as lack of training was not an option, a somewhat disingenuous response. A few companies measured against a risk assessment matrix, or base cost estimation on

the contractual requirements of clients, or governmental penalties for non-compliance.

When asked to give an example of HS/ER training that had failed, the majority identified failure as a result of poorly executed or inflexible delivery methods.

'I was witness to an offshore survival course the standard they got here was rubbish. His [the instructor] depth of knowledge and understanding of the subject was extremely limited, and so the information imparted to the people was wrong. There is a competency issue within the instructors perhaps that these centres are employing. There is also a quality standard issue to be looked at as well.'

Lack of personal engagement was also seen to be an issue. Interestingly however, and contrary to perceived wisdom, emerging markets were cited by a few interviewees as being unexpectedly positive about HS/ER enhancements.

'the enthusiasm actually in which people [in emerging markets] have embraced it. There is a reason for that, they have been neglected for whatever, 25 years, 30 years so they have a hunger to learn. A real genuine interest and want to get better and know where they want to be and clearly understand what the gap is and what the differences are and what they have got to make up and would like to get there. So we have been not so much caught out but refreshed by the enthusiasm in which people are embracing it.'

When asked about major enhancements they would wish to see in HS/ER training participants focused particularly on increasing employee engagement. Other themes included the related concept of the need to encourage greater employee personal responsibility for safety, the potential for trainees to gain real experience or very life-like simulation of emergency response training and how to achieve more visible and convincing safety leadership from top management.

It's 'all about leadership and that is developing safety leadership in people. That is the biggest barrier we have got, overcoming existing cultures.... safety is seen as the responsibility still of the safety department so we have immediately got a barrier there. Changing leadership behaviours is key to the whole lot, get that fixed and the rest is easy.'

Localisation versus consistency

Most companies participating were operating in multiple regions internationally and as a result had a very diverse and multi-cultural workforce, illustrated below.

Figure 4: Trainee Nationalities



Companies believed that delivery of training at a regional focal point delivered optimal results, both in terms of the effectiveness of the training and in being able to deliver it in a cost effective manner. Most companies sought to localise their HS/ER training and recognised this as an imperative for effective learning to take place. However there were differing perspectives on what form localisation should take and participants variously described localisation in terms of language of delivery, differing standards and legislative regimes and differing content in terms of the climatic or physical environment of the operations. Other interviewees spoke about the need for styles of delivery tailored to recognise differing cultural expectations or behaviours and even differing learning style preferences, in terms of expected levels of interactivity or didacticism.

'many of the big training organisations which cater to the global industry tend to originate from places like the Gulf of Mexico or the North Sea because that is where a lot of the expertise is Those types of training and that knowledge and expertise does not always conveniently transpose itself to other parts of the globe where the challenges and culture and the language and the approach can be different. I think it is very important that emergency response as with any kind of training be adapted to the culture of the area in which it is being delivered.'

While recognising that localisation might be desirable, concerns were also raised about potential lack of consistency. How can management be assured that the equivalent learning outcomes have been achieved?

'You have got two guys both have a certificate that says they have completed a course. One's in the UK one in Africa for example. On paper they look identical but in reality the standard that they have been trained and assessed to could be dangerously different... the biggest drawback would be just that inconsistency and lack of certainty of what you have got.'

The majority of operating companies in the oil and gas industry are spread globally and it cannot be acceptable from a corporate or legal perspective to have variations in HS/ER competency standards regardless of local industry practice or guidelines. Localisation may be desirable but should not detract from overall consistency of approach. Furthermore, many interviewees highlighted the financial burden the need for localisation of approach placed upon companies with the need for duplication of training for the various regions, which a global standard may help to circumvent.

'it just gives that portability. You get trained once, keep it up to date, keep it current, you don't have to keep reinventing the wheel, so that would be the benefit of a global solution.'

The interviewees generally suggested that consistency might be assured within a single company or business unit, but for the industry as a whole there remains an issue due to the variety of players. Company A might achieve internal consistency but there remain huge differences between companies A and B and in fact some of our interviewees were unconvinced that internal consistency was being achieved in large multinationals.

'They don't speak to each other. They don't share standards with each other. This is how ridiculous it is, basically in the oil and gas companies, each individual operating unit seems to stand and fall on its own. There is very little sharing of information.'

A Common Global Standard?

The majority of respondents felt that uniform industry standards would be beneficial to their organisation. Benefits that would accrue from a globally standardised approach included;

- Common standards / consistency across all international locations, resulting in improved quality of training for employees;
- Improved capabilities of emergency response personnel;
- Increased ability to trade globally;
- Ability to benchmark; and
- Greater capacity for organisations to assess requirements of jobs / resources.

Interestingly a small number of participants suggested that they would prefer to see a global standard being referred to as a guideline, in recognition of the importance of its being adaptable to the local environment. The word standard was felt to indicate an inability to be flexible. Only two respondents felt that an international standard would not be of benefit to their organisation.

In effect for interviewees consistency in training and competency was regarded as the ultimate goal, but it was felt that progress towards consistency was being both helped and hindered by the variety and complexity of existing standards – helped because these do provide external measurable benchmarks and hindered because there is too little standardisation in how these standards can be brought together and in how they are applied across the industry as a whole. This might be regarded as the central dilemma at the heart of the current project. *'OPITO is absolutely committed to the development of a set of common standards for the industry globally.'*

“Our aim is to achieve buy-in from the industry globally for one set of common standards to improve safety for every worker, no matter where they operate in the world. We have to move beyond the barricades and make sure that the obstacles highlighted in the research are overcome once and for all if we are to prevent accidents and save lives.” (David Doig)

The majority of our interviewees would agree that such a common standard is highly desirable but recognise that there are real barriers to its development and implementation.

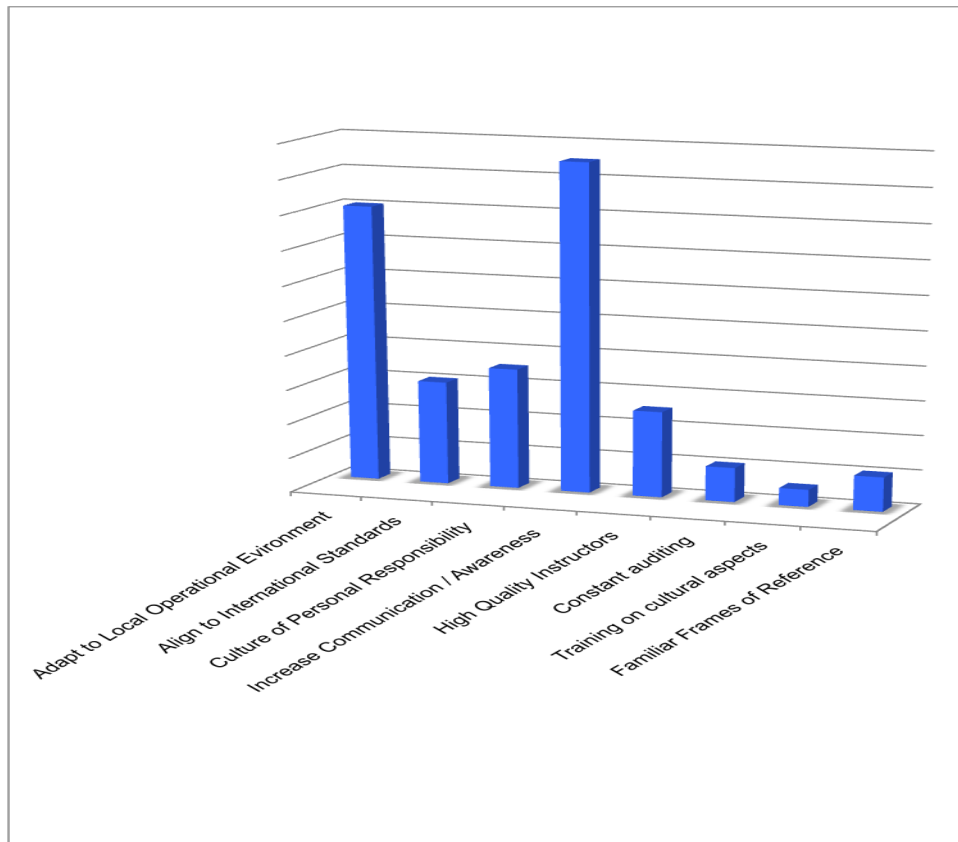
In terms of the differences between a global or a local approach to training, over half of the respondents saw local standards as being either different from or of lower quality than global standards, whilst nearly a quarter see no differences, or feel differences have started to diminish over the years. For some interviewees global standards were more about raising awareness while local enabled fine tuning to take place. It was also stressed again at this point that any standard developed must recognise the nuances of language and communication across national boundaries, and that training must be sympathetic to differing delivery, cultural and climatic requirements.

There would appear to be two distinct camps in terms of delivering HS/ER training, one which sought to overcome cultural difference in favour of an international organisational approach – ‘it’s the XX way’, while the other sought to recognise and deliver a culturally differentiated but still equally effective training. The ultimate aspiration must be to achieve a global standard which is deliverable locally.

‘One standard that is transferable within the industry would be Utopia, I just do not know how close we are to that’

Respondents identified a range of ways in which organisations could overcome potential problems relating to cultural difference (see figure 5).

Figure 5:Methods to Overcome Cultural Barriers



The challenge of achieving consistency

In terms of seeking to meet external standards, participant companies cited a myriad of standards / regulating bodies present in the industry (figure 6), including international and national bodies, legislation and guidelines and of course in entering different markets and different regions companies were presented with the challenge of delivering to the often differing standards expected in that location.

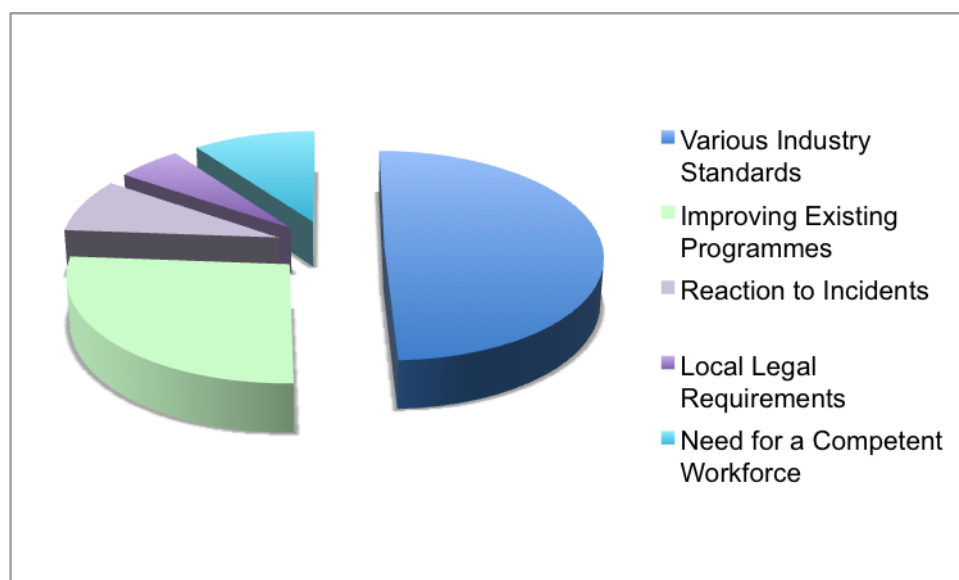
Figure 6: Standards / Regulating Bodies Discussed by Participants



‘As I said [we have] IMCA who are the Marine Contractors, the drillers, we’ve got IADC, we’ve got IMCA, we’ve got API, we’ve got UK Oil and Gas, and various others..... I don’t know what other equivalent to OPITO there are, I don’t know. There must be one in the US similar or in the Middle East or wherever.’

Figure 7 illustrates the complex variety of industry standards, which play a role in the development of organisations’ training programmes. Respondents referred to industry standards most frequently as impacting on programme design, however this was influenced by the fact that they felt the need to refer to the standards on multiple occasions. It is then unsurprising that companies face difficulties in dealing with all of these external agencies/bodies.

Figure 7: Factors Influencing HS/ER Programme Development



As one might expect the need for a competent workforce was highly influential. However, overall the emphasis is to a greater extent on compliance – with standards or legislation – rather than on workforce needs.

‘...one of the biggest risks that we run, is the competence of the people that we’ve got engaged on our project so therefore we have to be pretty robust in the kind of training that we are doing’

Given the emphasis on compliance noted above, it is also revealing that some respondents felt that training in and of itself has not necessarily led to competency. This tension indicates an area where further research would be very valuable.

‘Competency should be discussed on its own and training is a completely separate issue. What I was going to say is we have had a lot of problems in that individuals understanding and appreciation that competency is not an exact thing, we understand it to be a quality of being competent. Whereas other people that we come across believe that competency is something that you tick boxes and you achieve it.’

For many it is more important to be able to prove that training has been done (compliance) rather than that it has been effective (competence). It was also interesting that of all the interviewees responding to this particular question only one cited that their organisations' training development was driven by a moral obligation to keep its employees (and the environment) safe, perhaps of course because that was taken as a given by the respondents.

'We have a moral responsibility to make sure we do the right thing for our employees and put them in the best position to be able to respond to a particular emergency should it happen'

Consultation and communication

A key factor for many respondents in developing a global standard was the need for extensive communication and consultation, across all levels within the industry, and with a representative sample of key stakeholders across the world, in order that the solution not be regarded as being imposed by a particular region or a particular sector of the industry. Respondents felt that such consultation had been too little evident in the industry in the past.

'The oil and gas operating companies do not talk to each other and don't share practices so it is difficult to benchmark against another company that are doing the same as you do.'

This process of debate and information sharing was regarded by many interviewees as vital in developing and successfully implementing a standard framework across the world. The full variety of stakeholders must be represented in developing these standards, including; oil companies; national and international bodies; local governments; training establishments and service companies. HS/ER training standards should also enable the delivery of individual corporate objectives, alongside legislation, industry best practice and input from stakeholders at all levels in companies, including importantly 'factory floor' employees to ensure meaningful programme content.

'Unless all the governments of the world align on a common standard and then work with the asset owners to get aligned on a common standard then our training will always be localised.'

'I think we have to be less passive at times and what I mean by that is let's not wait....let's not wait for a potential client to come to us with a need, let's canvass a User Group of ten or twelve operators and sit down with them in a consultative approach and actually say to them - so what are your issues from a health & safety perspective.'

For the oil and gas industry and the majority of the respondents in this study a common global standard was seen to enhance the health and safety of the industry generally, and in the following ways;

- Workforce mobility would be eased
- Commercial benefits to companies (e.g. reduced costs of training, increased ability to trade globally)
- Companies responding in the same way to incidents
- Higher standards / measurement overall in the industry
- More efficiency in the industry
- Sharing of information across companies
- Ability to share technology / equipment at times of crisis

Only two respondents could see no benefits to the oil and gas industry associated with a common global standard.

When asked what else could be done overall to improve HS/ER training standards in the oil and gas industry, respondents spoke of a need to keep evolving and improving on the standards, and overall to eliminate the difference in standards. Some respondents used this as an opportunity to reinforce the need for communication and consultation. It was felt that increased awareness of the fundamental requirement for HS/ER training for all organisations in the industry was essential. Finally some respondents raised again concerns that competency was not necessarily being robustly assured in many companies operating under a compliance model.

Conclusions and recommendations

In conclusion, overwhelmingly the view of companies in the oil and gas sector is that a common global standard is seen as desirable but that standard should be conceptualised as a framework with the capacity to be localised in a meaningful way. It is therefore recommended that thorough engagement across the industry should be carried out to ensure that all levels in the supply chain and all regions have an opportunity to contribute to the debate on the precise formulation of this framework.

'as long as that [common global] standard has enough flexibility and didn't preclude organisations from evolving in their own way. Then the answer would be yes, as long as it wasn't completely inflexible.'

One senior manager commented on the extent to which *'HS/ER is an ongoing journey not a destination and whereas there's recognition we need a global standard there's also no 'kwik fix'*. The process of discussion and debate towards developing a global framework or guideline would take the industry on a significant step on that forward journey.

While the topic is high profile currently as a result of the Gulf of Mexico incident, that urgency will wane and it is therefore important to seek to make these changes while the strategic imperative is clear. Equally in times of fiscal belt tightening and narrow margins the industry may be seeking cost effective solutions, which may not of course satisfy the higher aspirations expressed by many in this study. For this would appear to be in many respects a more reactive industry than outsiders might anticipate, given that it is also an industry that is constantly testing and stretching the parameters of what is possible. As President Obama noted drilling for oil and gas is not – and has never been – a risk-free operation and those companies that have been successfully involved in exploration and production have not been risk averse: it is important that the industry recognise that while continuing to be prepared to take risks, it does not do so by recklessly endangering its people and the environment.

In conclusion the authors would recommend that the global framework be developed, as part of a global consultation exercise and that it recognise the following key principles:

That a common global standard for HS / ER is desirable, but this framework must allow local tailoring or enhancement.

'to make it a beneficial training to employees, having the ability to localise the training based on the minimum expectations and then drilling down, to me is that much more effective. I just don't think you can get to the level that we as health and safety professionals expect from our employees with the global training. You don't get consistency if you only do localised training. So that's one of, I think, the downsides to not having some basic global minimum expectations. So if you're only localising training you lose out on some other things that you want to have with consistent practice across the business but I think you have to have both.'

The global framework must be demonstrably international;

'The users have to see OPITO as an international company and not a North Sea or a UK company. I think that's a major issue.'

Although some express doubts that a global standard is possible;

'There are so many different facets to safety that you can't say there is going to be one safety training standard and I think it would be a lot of work to get to that.'

There is a need to enhance safety leadership; leaders need to be seen to embrace the importance of HS/ER standards and to uphold that philosophy at all times.

'Improvement is all about leadership and that is developing safety leadership in people. That is the biggest barrier we have got, overcoming existing cultures and developing safety leadership in people.....Changing leadership behaviours is key to the whole lot, get that fixed and the rest is easy.'

Employees at all levels need to take individual ownership of HS/ER issues, and engage with the training.

'You overcome [the barrier] by developing a culture in which people take safety seriously and personally where it is not something that is imposed on them from the outside and they grudgingly accept but it is something that people are aligned with and they feel their individual welfare is closely aligned with the business needs of the company.'

There is a need to ensure that training results in workers who are competent in HS/ER.

'...one of the main things for us is that we think that a lot of the training delivered is at times really attendance based and we would prefer to see this go to some form of competence based modular approach.'

Communication and consultation across oil companies and with standard bodies and local governments needs to improve.

'The industry lesson has got to be to consult and consult and consult and when you have finished consulting, consult again because there will be somebody who has missed out.'

That the Framework must be built on a better understanding of how to improve employee behaviours

'We've seen individuals who may have been removed from site, now bringing it to management's attention and holding the client to account for their safety systems and compliance. I'm not sure that would have happened prior to 2008'

Future areas for research

The development of more effective measures of the impact of HS/ER training, and its delivery;

The exploration of the reality of HS/ER training from staff working in operationally challenging environments, from the shop floor to the senior management;

Better understanding of the impact of differing cultures on health, safety and emergency response behaviours.

'As the industry moves into more complex drilling, more dangerous locations, more technically cutting edge type things, that needs to be supported with the right emergency response management programs and general competency.

References

Crichton, M.T., Lauche, K. and Flin, R. (2005) Incident Commando Skills in the Management of an Oil Industry Drilling Incident: a Case Study, *Journal of Contingencies and Crisis Management*, 13 (3), pp. 116-128

Kane, A., 2009. 'S' is for More than Just Safety. *2009 SPE Offshore Europe Oil & Gas Conference & Exhibition*. 8-11 September 2009. Aberdeen. SPE International

Obama, President B. (2010) *Remarks by the President to the nation on the BP oil spill*. Available at www.whitehouse.gov/the-press-office/remarks-president-nation-bp-oil-spill Accessed 24/08/10