

## **World Oil Executive Viewpoint**

### **The time is ripe for crew resource management**

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Washington State University psychology professor Tahira M. Probst, co-author of an investigation that correlated job insecurity with employee safety outcomes, suggested to *The New York Times* in May 2014 that the anxiety generated by lingering threats of layoffs is a root cause of many workplace accidents. And, she added, "employees are also more reluctant to report injuries when they are fearful of losing their jobs. So, job insecurity is also related to accident underreporting."

Professor Probst's insight into emotional stress and anxiety in the workplace points out one of several critical human factors that impact on-the-job performance. A likely scenario in today's depressed global exploration and production sector would be one where corporate pressure to improve efficiency mistakenly manifests itself in increased stress on the front line. This stress, perceived or real, could inadvertently drive an increase in high-risk behavior in the form of deviations from normal operating procedures and questionable decision-making. It stands to reason that, now more than ever, it is incumbent on the global exploration and production sector to recognize and mitigate the human factors that can result in costly or potentially catastrophic front line errors, especially should they occur at the wellsite. Thus, the downturn accentuates the importance of making human factors awareness and crew resource management (CRM) training a key consideration in an oil and gas company's comprehensive risk mitigation and performance strategies.

Human factors, including, but not limited to, fatigue, task overload, stress and cognitive and physiological limits, is a broad area of research into the conditions that can spawn workplace mistakes, regardless of one's level of training or experience. Specifically, a comprehensive,

formal CRM program is designed to instill the cognitive and interpersonal skills that enable employees to identify operational conditions and performance-limiting human factors in order to avoid, trap and mitigate human error.

CRM training and human factors mitigation certainly are not new concepts within high-reliability industries. In the late 1970's, the U.S. National Aeronautics and Space Administration (NASA) designed the first CRM program, which commercial aviation adopted shortly thereafter in response to a spate of accidents largely attributed to aircrew error and poor interpersonal communications. In 2014, just as the slide in oil prices was gaining traction, the International Association of Oil & Gas Producers (IOGP) published its 501/502/503 reports, wherein University of Aberdeen professor Rhona Flin advocated for the wholesale incorporation of CRM in the well operations environment.

### **CRM gains ground in O&G**

Even though inherent human factors are shown to weigh heavily on situational awareness, performance and decision-making, aside from commercial aviation, few industries include the management of same in their traditional "hazard wheels" or in planning and pre-job briefings. However, insofar as the oilfield is concerned, the tide is beginning to shift, as reflected in October's IADC Human Factors Conference and Exhibition in Galveston, TX. There, it was pointed out that for safe and efficient drilling operations, technical competency should be augmented with rig crew training in decision-making, situation awareness and other essential non-technical skills. That is precisely what a CRM program delivers.

A comprehensive CRM program instills the seven "critical skills" that play undeniably critical roles in controlling the human factors that lead to accident-causing lapses. Through both practice and dedicated "coaching" in the context of the specific onshore and offshore work

environment, customized CRM training and human factors awareness skill development dramatically improves leadership and teamwork, decision making, situational awareness, assertiveness, adaptability/flexibility, communication and task analysis.

Underlying the CRM methodology is developing the aforementioned cognitive and interpersonal skills necessary to maintain a safe and successful working environment. The former is defined as the mental processes used to gain and maintain situational awareness, to solve problems and to make decisions. These cognitive skills sets go hand-in-hand with the interpersonal, or communications, skills that cover a wide range of behavioral activities associated with being part of a team – communications being the key driver.

A well-grounded CRM program targets those performance-shaping (human) factors that contribute to errors, including fatigue, overall competency, and of particular relevance today, professional and personal-related stresses. Another key component includes workload management, be it over-tasking in the case of a new crewmember assuming an unfamiliar position, or under-tasking, whereas a more experienced crew or one conditionally dependent on automation, may become complacent. As mentioned, a comprehensive CRM program also addresses fundamental human physiological limits including visual illusions-blind spots, motion-induced phenomenon and short-term working memory limits.

Embedding a matured CRM program into an offshore or onshore well delivery plan, *and* the subsequent well production plan, not only tempers an operator's accident risk-exposure, but the resultant reduction in human error also overtly complements the industry's collective appetite for greater efficiency and profitability, understandably so in a price-driven marketplace. Early adopters of CRM in the oil and gas space can attest to reducing their non-productive time (NPT), total recordable injury rate (TRIR) and invisible lost time (ILT).

**Why now?**

So, why is this the ideal time for drilling and production companies to embrace what earlier generations might have dismissed out-of-hand as so much psychobabble? Obviously, contemporary technologies, crew demographics and operating environments bear little to no resemblance to their counterparts of yesteryear and require appreciably higher levels of attentiveness and competencies. Add in the insecurities that naturally accompany an industry in depression and the absolute employee engagement at the core of CRM is imperative to ensure the crew performs safely and efficiently.

With economic margins narrowing, adopting a CRM program, and one that emphasizes honest top-down communication, also makes sound business sense by enhancing crew effectiveness through minimizing potentially costly and preventable errors, maximizing crew resources and optimizing overall risk management.

***Dave Fravor is a former U.S. Navy pilot, where serving as a CRM facilitator and commanding officer of the Black Aces fighter squadron highlighted his distinguished 24-year career. Today, he leads Check-6 client managers and coaches on deploying real-world solutions that improve a client's bottom line.***