Pursuing a step change for safety: An industry-driven global effort

Mike Killalea, Editor & Publisher

THE DRILLING TEAM had just run 7-in. liner on a location in Alaska and was rigging down slips and elevators. The equipment was being lowered down the v-door for transport away by forklift. One employee, moving equipment away from the receiving end of the v-door, signals for the forklift operator. He tries to stand to the side, though it was awkward to both juggle equipment and communicate with the forklift from there.

He thought he'd made eye contact with the spotter on the rig floor above, at least well enough to signal his presence. He bent over to move another piece of gear and was slammed in the head by a pair of slips speeding down the v-door.

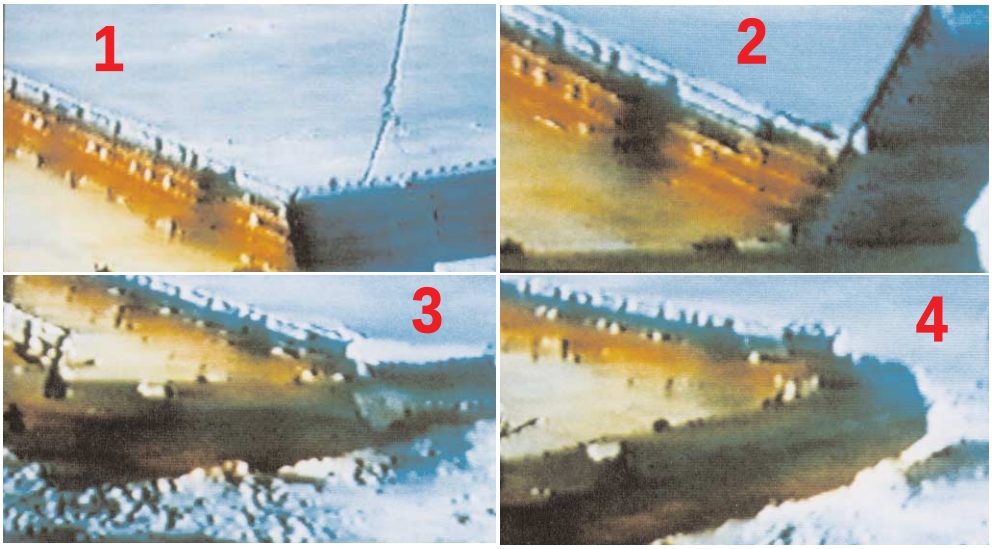
"The next thing I knew I was picking myself up off the rig mat," he recalled. "I was trying to feel my nose. I couldn't feel my nose."

The scene is one of several vignettes that appear on a video produced by the **Global Drilling Safety Leadership Initiative**, which stresses that this accident and the others shown on the 15-minute tape could have been prevented—*if* avoiding risks to personnel had been a priority. "Anybody taking part in this job could have stopped the accident from happening," the narrator comments.

In another scene, a worker attempts to attach a crane cable to an open crate on a workboat in extremely rough seas. The worker stands and flags the crane operator to lift the heavy box, which carries a section of a BOP. As the crane lifts the crate into the air, the cable comes loose. The crate crashes against the stern, then tumbles into the sea. Hundreds of thousands of dollars of equipment just became a fish condo.

Fortunately, neither incident resulted in permanent injuries. "Yet it only takes a series of events, and maybe not related events, to change a situation dramatically," the video observes.

The video, now in draft stage, goes on to detail just such a case—the explosion and fire aboard the Piper Alpha production platform, in which 167 workers died. "A poor safety culture was an important determinant in this accident," the narrator says. The video uses footage from a **British Broadcasting Corp** program on the accident.



An accident that found a place to happen: In this vignette on a video produced by the Global Drilling Safety Leadership Initiative, a lone deckhand used what's described as inadequate equipment in very rough seas to attach a crane cable to an open crate containing a BOP component. The result unfolds as sequenced above: The cable comes loose as it's lifted, and the costly equipment tumbles into the sea, transformed into fish housing. The video calls the result "almost inevitable". Luckily, no one was hurt, though other scenes cannot make the same claim.

The video was developed and produced solely by the industry for the industry. The sponsors are **Halliburton**, **Shell Expro**, **BP Amoco Exploration** and **Sedco Forex**. It is narrated by Halliburton's Aberdeen Communications Manager **Julie MacGreggor.** Except for the BBC segment, the footage was donated by drilling and producing companies.

Once completed, 200 of the videos will be produced and distributed to top executives with operators and drilling contractors. A letter from **Dr George Watkins** of **Conoco**, Chairman of the Cross Industry Safety Leadership Forum, will accompany the tapes.

A STEP CHANGE IN SAFETY

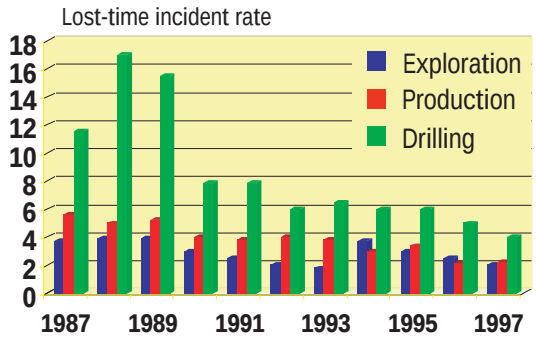
The Global Drilling Safety Leadership Initiative (GDSLI) was created in January 1998 in Houston at a meeting of 56 drilling professionals representing 23 producer, contract-drilling and service organizations. Participants hailed from Europe, North and South America, the Caspian and North Africa.

That event also produced the Houston Declaration, which the group established as a step change for safety based on personal commitment, leadership and behavior: "We pledge our commitment to work together to achieve a step change in safety performance in all the areas where we have activity. We believe that a step change in safety can be achieved through personal commitment, leadership, the way we behave and the way we work together."

Safety statistics show the need for the "step change". Accidents on drilling rigs account for 45% of the lost-time accidents in the E&P business, though drilling activities represent just 23% of manhours, according to statistics developed by **BP Amoco**. And according to **E&P Forum's** E&P Annual Safety Survey, conducted in the UK sector of the North Sea, drilling injuries are more severe than those of other functions. (See Figures 1 and 2.)

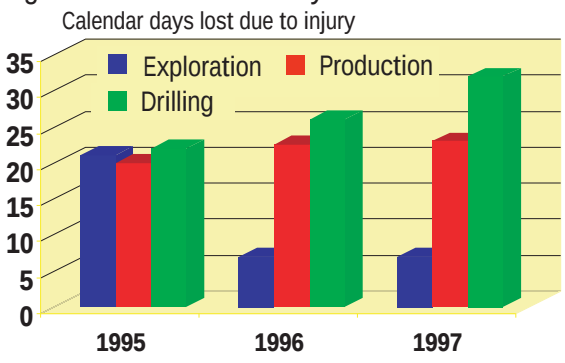
Further, the GDSLI, also called the Global Safety Leadership Forum, concluded that accident prevention efforts are suffering from diminishing returns. Improvement in accident incidence is proceeding at a far slower pace than the or-

Figure 1: Lost-time incidents by industry sector



Source: E&P Forum

Figure 2: Accident severity



Source: E&P Forum

ganizers wish. The answer, they concluded, is a step change, a quantum decline in rig-floor accidents.

The importance and value of this goal notwithstanding, however, it is important to note that Piper Alpha was not a drilling unit, but a production platform.

ENDING SAFETY MANAGEMENT

Said **BP Amoco** Global Consultant-Safety **Rob Buchan**, who is coordinating the GDSLI's activities, "The aim of this campaign is to create a permanent cultural change in safety throughout our industry. Once this has been accomplished, the need for safety management will no longer be required, allowing more effort to be directed toward improving business performance."

At first glance, the idea of eliminating safety management seems at odds with the goal of reducing accidents. However, Mr Buchan explains that once safety is truly a part of the industry's culture, like efficiency and commercial competitiveness, the need for continually pounding the drumbeat of safety will wither away.

For example, Mr Buchan cites **DuPont**, which developed the popular and widely used safety-observation program STOP. DuPont, he says, no longer uses STOP. DuPont has incorporated safe practices into its corporate culture, he explains.

"Roughnecks don't want to be hurt, but they don't want to be paralyzed by safety, either," he said. "One rig worker I spoke to used the term 'tyranny of safety'."

REGIONAL WORK GROUPS

The GDSLI established regional work groups in the North Sea, Gulf of Mexico and Latin America, as well as for a Global Region. The North Sea group was organized as a subset of the existing Step Change in Safety Initiative, formed in 1997. By the end of 1999, Mr Buchan expects regional work groups to exist in either the Far East or Middle East.

The Regional Work Groups focus on areas of local concern. For instance, in Latin America, vehicular safety is a major topic. In the North Sea, objects dropped from derricks is a central issue.

A steering group comprising senior managers representing 5 operators, 5 drilling contractors and 3 service companies was formed to continue the effort. **Terry Lucht** of **Conoco** was elected chairman.

The steering group is working with IADC and other groups, including the UK Offshore Operators Association and the Offshore Operators Committee.

IADC sponsors the safety forum's website, located at iadc.org/globalsafety. The Safety Leadership Forum owns the site.

NORTH SEA HEAD START

Having a year's jump on the global effort, the North Sea's step-change program is already forging ahead. The first 2 products of the Drilling Safety Work Group, led by **Charlie Mearns** of **Santa Fe (UK)**, are now available. The first is a CD entitled "Strategy for Eliminating Incidence of Dropped Objects within Drilling Derricks" and the second, a booklet entitled "Look This Way".

The dropped-objects CD-ROM contains in PDF and PPT formats the guidelines developed by the North Sea work group who studied the problem. Some of the graphics incorporated into the report are shown in the article "The Harding Derrick Inspection Guide: Defying gravity", beginning on p18.

"Look This Way" was designed to combine the best elements of STOP, START and other safety-observation programs,

Sobering statistics: Drilling rigs account for 45% of the lost-time accidents in the North Sea, though drilling activities represent just 23% of manhours, according to **BP Amoco** statistics. Figure 1 details the disparity among North Sea E&P sectors. And according to E&P Forum's E&P Annual Safety Survey (Figure 2), conducted in the UK sector of the North Sea, drilling injuries are more severe than those of other functions.

Mr Buchan said. The booklet contains a forward by Cross Industry Safety Leadership Forum Chairman Dr George Watkins.

Stepping forward for a change: The GDSLI and the UK's Drilling Safety Work Group are spreading the word in booklets and on CD-ROMs.

IADC's HSE Committee is considering adapting "Look This Way" and the dropped-objects guidelines for broader inclusion among its safety materials.

These publications were recently distributed from IADC's office of European Offshore Affairs in Aberdeen. (44/1224-874800, fax, 44/1224-875600, dennis.krahn@iadc.org).

DAWN OF A NEW ERA

The GDSLI is also developing a multimedia CD-ROM. "Safety Can't Wait: The Dawn of a New Era" provides the background on GDSLI, how it functions, the role of regional work groups and knowledge sharing, especially through the group's website.

Mr Buchan says GDSLI plans to distribute the approximately 5-minute CD-ROM to dozens of key leaders at drilling, producing and service firms. He expects the disk to be available in September.

ACHIEVING CULTURAL CHANGE

The Global Safety Leadership Forum stresses that, for the industry to operate more safely, it must create a work environment and culture where accidents not only do not occur, but are unacceptable.

Developing a people-centered focus won't be easy in our "commercially aggressive" industry, the videotape says: "We train our people on all the technical job functions, but not how to interact with people—something they must do every day." ■

Ending the threat of items falling in derricks

TO RID THE INDUSTRY of a long-present threat to safety, the **Drilling Safety Work Group**, supported by the IADC North Sea Chapter and UKOOA, have developed guidelines aimed at stopping objects from being dropped from drilling derricks.

"Over the years … there have been a high number of incidents of dropped/falling objects within drilling derrick structures," reads the introduction to the guidelines. "The potential for this type of incident to severely injure personnel or cause material damage on the drill floor and in the surrounding area is very high. In extreme cases, fatal injuries to personnel have resulted."

The guidelines identified 19 dropped-object incidents in 1997. Objects included a shackle, bumper bar, pipe-sense roller, sheared bold, 2 7/8-in. drill pipe, a lower packer section and a wireline tool.

The work group developed an 8-step program, starting with an awareness campaign. Subsequent steps are an action plan, remedial action, manufacturers and suppliers, automated derrick systems, third parties, and continuous improvement.

To eliminate dropped objects, they must first be identified, the guidelines say. To do this, the derrick can be subdivided into manageable sections. The graphic on p 18 shows an example, also provided in the guidelines.

At this point, redundant equipment can be removed and risks can be associated with all items in the derrick.

Another important step is to review and update derrick inspection checklists, planned maintenance systems and other auditing tools to ensure they cover all times identified in the inventory.

The guidelines recommend that information provided by manufacturers and suppliers should be obtained and scrutinized. All available equipment bulletins and news letters should be collected.

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