

Photo 1: Walking rigs are large land-based rigs used on locations where numerous wells are drilled in a small area.



into distinct fields that are tracked and reported by the Energy Administration Information office of the Department of Energy ([www.eia.doe.gov/oil\\_gas/rpd/topfields.pdf](http://www.eia.doe.gov/oil_gas/rpd/topfields.pdf)). Certain fields were selected as starting points, including the Permian Basin in west Texas, the Piceance Basin in western Colorado, the San Juan Basin in northwest New Mexico, the Barnett Shales in central Texas, the Jonah Fields of northern Colorado, and the TX-LA-MS Salt Province of east Texas and Louisiana. These fields included both natural gas and oil formations, and shallow as well as deep reserves.

O&G companies do not generally drill their own wells. Specialized companies are contracted to do this, along with numerous well servicing contractors that help bring a well into production. For the early phases of this project, the primary focus was on the drilling operations rather than the service tasks. Later phases of the project will include other types of rigs as well as other operations such as the trucking companies that move rigs from site to site.

In July 2008, site visits were set up to learn about drilling operations and to begin gathering information on the workforce. Drill rigs come in many sizes, and companies hire rigs depending on the depth of the hole to be drilled and the geologic complexity that will be encountered. For wells that are shallow (e.g., less than 1 mile deep), rigs are smaller and may even be truck-mounted, similar to water well drilling units. Larger rigs are more complex, but the processes used to drill a hole and to move the rig to new locations are largely the same, regardless of size.

Most drill rigs use five- or six-person crews, with either two or three crews per rig, depending on shift

(or *tower* as it is known in the industry) length. The rig boss, known as the *tool pusher*, lives on site in a house trailer provided by the company so that he is always available. Each rig usually has two tool pushers, and these men rotate their *hitches* (number of days worked before going on leave) so that a supervisor is always on site.

For the rigs visited, the hitches for tool pushers ranged from 3 days to 2 weeks, while the hitches for the men ranged from 1 to 3 weeks. Use of the word "men" is purposeful. In more than 2 years and visits to more than 40 rigs, the author has not encountered a woman working on a rig. This is a male-dominated work culture.

Learning about a new industry takes more than a few visits to worksites. One must systematically gather information. Consequently, a list of questions was developed to help identify cultural norms. The initial list was based on the author's experiences in the mining industry; it was meant to be general enough to provide a broad introduction to the industry that could subsequently be refined to capture more subtle cultural data.

Information was gathered on the following:

- drill rig site, name, company and method;
- location and size of workforce;
- union affiliation (if any);
- contractors (if any);
- rough percentage of new hires (workers with less than 1 year of experience);
- general workforce demographics;
- training required and who provided it (both for career and for this rig);
- preferred materials/media for training, including available facilities;
- common beliefs and perceptions about safety and work hazards;
- work practices and how work is assigned to different workers;
- best practices and/or company policies concerning operations;
- recognized "masters" (who do people look up to and why);
- incidents, injuries and near misses workers have experienced or witnessed.

Some items fell out fairly quickly. For example, labor unions are not common, and every rig visited was contracted rather than owned and operated by the energy company. In addition, this industry reacts rapidly to commodity prices. When prices are high, a site will have a significant number of new hires with little experience; when prices drop, new hires are the first to lose their jobs, as the rigs they work on are *stacked* and no longer available for hire. Therefore, the percentage of inexperienced workers was a moving target.

The original questions served as a starting point. Workers provided much information that was used to refine the data gathering necessary to begin developing a picture of this unique work culture.



Over the next 2 years, the research team visited more than 40 rigs in seven different areas of the country. These included small, mobile rigs, rigs in service for more than 60 years (most still using manual methods), others that were only months old as well as much more automated, and large “walking” rigs. Walking rigs are large land-based rigs used on locations where numerous wells are drilled in a small area. Rather than dismantling the rig to move it to a new site, workers “walk” it forward to its intended location. This relatively new technology is more commonly found in western oil fields, where many wells are clustered on a single site (Photo 1).

More than 1,000 photographs were taken of rigs, sites, workers, and any other signs or artifacts that would provide clues about the culture. Standard ethnographic tools were employed, including interviews, observations, field notes, informal conversations, and review of documents such as company policies, safety posters and training materials.

In all cases, the primary gatekeeper for access to the sites was the safety director for the energy company or the drilling company. These individuals provided a wealth of information on tasks and procedures as well as access to the rigs. In all cases, they were invaluable to the project’s success.

### Why Stories Matter

High-risk work cultures share a love of stories. Stories provide more than entertainment on work-sites; they are used to share information about cultural norms and expectations, and provide graphic illustrations about what happens if those norms are violated (Cullen, 2008).

The roughnecks working in the O&G drilling industry are no exception. They shared stories about people they had met, about near misses (called “near hits” by most of them), about weather extremes, and about many incidents that provided harsh but valuable lessons on how to do this work. They also talked about what they do when not working, including stories about family, friends and leisure-time activities. All of these provide keys to what these workers value.

Stories share important features that make them valuable to an ethnographer. First, they are always culturally-based. This means that they are *situated*; they are about *someone*, who is doing *something* located *somewhere*, during a *specific time*. Stories reveal much about the culture, through the language used, the actions of heroes and villains, and the reactions of listeners.

Stories also help people organize information in a way that is understandable. New hires in the O&G industry often have a difficult time *breaking out* (a term used for entering the workforce for the first time) because of the unfamiliar tools, terms, work practices or expectations they must master in order to perform the job (Livo & Rietz, 1986). It can be bewildering to be new on a jobsite where even

the tools have unfamiliar names. To remain safe while they learn the job, new workers need a way to deal with an abundance of information; stories help them do so (Cullen & Fein, 2005).

If the goal of safety training is to educate new employees on work hazards and convince all employees to act safely on the job, stories are an excellent tool. Haven (2007) presents the results of several research studies on the power of stories to provide information and help create meaning. He says research shows that stories are effective teaching tools because they evoke prior knowledge; provide details that may be otherwise ignored; and improve comprehension (p. 92).

Stories are remembered by listeners because they are more interesting than facts or statistics. Listeners can learn vicariously, putting themselves into the story to not only think about what is happening, but also to feel the emotions and decide what they would have done had they been the protagonist. Trainees listen with different levels of consciousness, according to Neuhauser (1993), who believes that using the whole brain allows learners to understand what they are hearing, as well as to feel it.

For safety trainers, stories are one of the most powerful tools available. The good news is that stories are everywhere. Every incident/injury statistic has a story behind it, and every SH&E regulation is “written in blood.” Workers are eager to share their stories if they believe they will not be penalized for doing so.

### Insiders & Gatekeepers

One primary role of cultures is to define who is/is not a member (Van Maanen & Barley, 1984). High-risk work cultures are particularly adept at this because members believe they are the only ones who “have what it takes” to perform the work. They be-

Studying any culture *in situ* requires immersion of the researcher, to some degree, in the work culture itself.



## Occupational Culture

Occupational culture and organizational culture are not the same. While an organization’s rules—its policies and procedures—are usually written and distributed, occupational rules are not. Work culture rules are pragmatic in that they are developed over time by workers themselves, and provide a road map for survival for members of the culture to follow. Insiders instruct new members in “the way we do things around here” and provide both rewards for following cultural rules, and sanctions for violating them. Members tie their identity closely to their work (not their company), and share values, norms and perspectives with those who perform the same type of work, often choosing to socialize exclusively with fellow workers. Occupational cultures that involve shared danger, such as firefighters, the military or high-risk industries, are strong and will resist changes suggested by outsiders. The sense of fraternity that shared danger creates is part of the identity of insiders, who do not believe others could do the work, or that they understand those who do. Occupational cultures are powerful tools that can be used to create effective training.