

**Investigation of Fatality
West Cameron Block 240
OCS-G 27008
December 1, 2006**

**Gulf of Mexico
Off the Louisiana Coast**



**U.S. Department of the Interior
Minerals Management Service
Gulf of Mexico OCS Regional Office**

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Frank Pausina – Chairman
Jason Mathews
Eric Fontenot
Marty Rinaudo

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Glossary of Acronyms

B-CR – Badger Company Representative

B-OM – Badger Operations Manager

T-CO – TODCO Crane Operator

T-D – TODCO Driller

T-D/HO – TODCO Derrickhand/Hoist Operator

T-F1 – TODCO Floorhand 1

T-F2 – TODCO Floorhand 2

T-F3 (D) – TODCO Floorhand 3 - Deceased

T-OIM – TODCO Offshore Installation Manager

T-R1 – TODCO Roustabout 1

T-R2 – TODCO Roustabout 2

T-R3 – TODCO Roustabout 3

T-VPHSE – TODCO Vice President of Health, Safety, and Environmental Matters

Executive Summary

On the evening of December 1, 2006, TODCO rig personnel were engaged in the task of laying down 5-1/2 inch drill pipe from the rig floor to TODCO 207's pipe rack.. The task of laying down 5-1/2 inch drill pipe involved the use of the rig floor's air hoist and a nylon strap attached to the air hoist cable. After laying down 30 to 50 joints of drill pipe during the night shift (1200 hours – 2400 hours), a single joint of drill pipe weighing approximately 600 lbs. was lifted from the mousehole and swung towards the V-door. Just before reaching the V-door, the drill pipe was unexpectedly lowered onto the rig floor and inadvertently released from the nylon strap. The drill pipe fell towards the draw works, striking a TODCO floor hand in the head and shoulder. The resulting injuries were fatal.

The causes of the accident were an improperly cinched strap, the inexperience of the roustabout cinching the strap, supervisory misjudgment in allowing the inexperienced employee to cinch the strap, lack of training, the operator's over-reliance on the drilling contractor's safety plan, the lack of specific safety responsibilities of the operator's representative, and the ineffectiveness of the contractor's safety program and its HSE department. Recommendations made by the panel were (1) a Safety Alert to Lessees and Operators to address those items and (2) a modification of 30 CFR 250.108 to include all lifting operations associated with oil and gas operations on the OCS.

Introduction

Authority

An accident that resulted in one fatality occurred on The Offshore Drilling Company's (TODCO) THE 207 (TODCO 207) drilling rig on Badger's West Cameron Block 240, Lease OCS-G 27008, in the Gulf of Mexico, offshore the State of Louisiana, on December 1, 2006, at approximately 1300 hours. Pursuant to Section 208, Subsection 22 (d), (e), and (f), of the Outer Continental Shelf (OCS) Lands Act, as amended in 1978, and Department of the Interior Regulations 30 CFR 250, Minerals Management Service (MMS) is required to investigate and prepare a public report of this accident. By memorandum dated December 14, 2006, the following personnel were named to the investigative panel:

Frank Pausina, Chairman – Office of Safety Management, GOM OCS Region
Jason Mathews – Accident Investigation Branch, MMS Headquarters Herndon
Eric Fontenot – Lake Charles District, Field Operations, GOM OCS Region
Marty Rinaudo – Lafayette District, Field Operations, GOM OCS Region

Background

Lease OCS-G 27008 covers approximately 5,000 acres and is located in West Cameron Block 240, Gulf of Mexico, off the Louisiana Coast. *For lease location, see Attachment 1.* The lease was issued effective July 1, 2005. Badger became Designated Operator of the lease on September 19, 2005.

Procedures

Two MMS representatives, including a member of the panel, visited the accident scene on December 4, 2006.

On January 16, 2007, at Preis & Roy Law Corporation in Lafayette, Louisiana, the panel interviewed two TODCO roustabouts and a TODCO crane operator who were on shift at the time

of the accident. A TODCO floor hand, who participated in the task involving the fatality, was also interviewed.

On January 17, 2007, at Preis & Roy Law Corporation in Lafayette, Louisiana, the panel interviewed a TODCO floor hand, a TODCO derrick hand and the TODCO driller, all of whom participated in the task involving the fatality. The TODCO Offshore Installation Manager (OIM) was also interviewed at that time.

On February 9, 2007, at Badger's office in Lafayette, Louisiana, the panel interviewed Badger's Manager of Operations and Badger's company representative on the rig at the time of the accident.

On February 15, 2007, at Preis & Roy Law Corporation in Houston, Texas, the panel interviewed a TODCO roustabout who participated in the task involving the fatality and the TODCO Vice-President for Health, Safety, and Environmental matters (HSE).

Various documents from Badger and TODCO pertinent to the investigation were collected by the panel.

The panel met numerous times throughout the investigation and, after having considered all of the information available, produced this report.

Findings

The Accident

On Wednesday, November 29, 2006, the parties involved in the incident began their two-week hitch on the TODCO 207, which was operating in the West Cameron area, Block 240. T-R3, who was classified as a Roustabout 2 at the time of the incident, arrived at the TODCO 207 approximately at 2330 hours, which was his first two-week hitch on the TODCO 207 since his hire on the date of June 28, 2006. Even though there is distinction between a Roustabout 1 and Roustabout 2 in pay, there are no evident personnel descriptions available to define the differences, responsibilities, and/or limitations. According to interviews, a Roustabout 2 is a new employee to TODCO who may or may not have previous experience, but can be promoted to a Roustabout 1 normally after a 90-day evaluation period. T-R3 had no previous experience in the oil and gas industry prior to June 2006 and was on the job for over 90 days. T-F2 and T-R3 said that T-R3 was wearing a blue hardhat. Yet, T-D/HO said that T-R3 was wearing a red hardhat. In testimony, a red hardhat differentiates a Roustabout 1 and Roustabout 2; nevertheless, like the personnel descriptions, there was no apparent dissimilarities forwarded to the panel by TODCO mentioning the difference between a blue and red hardhat.

Prior to T-R3's arrival at the TODCO 207, T-OIM received an e-mail from a TODCO personnel manager on November, 29, 2006, at 0740 hours, informing the T-OIM of T-R3's arrival. The e-mail did not include any background or personnel history of T-R3. Once T-R3 arrived at the TODCO 207, he signed in and went to bed at the request of the night tool pusher since he was apparently ill from the vessel ride to the TODCO 207.

T-R3 was given an overview of the TODCO 207 on the morning of Thursday, November 30, 2006, prior to his first shift. TR-3 reported the overview consisted of, "You watch the tape, welcome to this rig, yadda-yadda." Following the rig orientation, TR-3 was shown around the rig by other roustabouts following the night shift's pre-shift safety meeting. During his first shift on the TODCO 207, T-R3 performed typical roustabout duties, e.g., cleaning and assisting a mechanic making repairs to an engine. Because of high winds during the shift, T-OIM decided to pull out of the hole at 1900 hours and cease all operations of laying down drill pipe.

At 0800 hours on Friday, December 1, 2006, the day shift (2400 hours – 1200 hours) resumed operations and began pulling 5½-inch drill pipe out of the hole. Before relieving the day shift, members of the night shift participated in a pre-shift safety meeting, according to the Pre/Post Tour and Weekly Safety Meeting Log; however, B-CR was present even though he did not sign in. The B-CR's presence at the meeting was described by T-F1 as, "He was sitting in the back of the room at the computer.....he said a few things, but I couldn't really hear him." The pre-shift safety meeting was lead by T-OIM.

Following the commencement of the pre-shift safety meeting, the crane crew (T-R1, T-R2, T-R3, and T-CO) performed a verbal THINK drill, led by T-CO. T-CO was supervising T-R1, T-R2, and T-R3 receiving the 5½-inch drill pipe from the drill floor and bundling it up for lifting. Simultaneously, the drill crew (T-F1, T-F2, T-F3(D), T-D/HO, and T-D) performed a verbal THINK drill, led by T-Driller. T-D was supervising T-F1, T-F2, T-F3(D), and T-D/HO in pulling the 5½-inch drill pipe and lowering it down the V-door. Both drills were conducted within their respective work areas where the work was being performed.

At 1200 hours, the night shift relieved the day shift, which was working with an additional roustabout on the rig floor. T-F1 visually inspected the nylon strap and rigging equipment used for lifting the drill pipe out of the mousehole before any lifts were made by the night shift. T-D notified T-CO that he would like a roustabout to come to the rig floor to assist in attaching the nylon straps to the drill pipe and walking it to the V-door once it was lifted by the air hoist operated by T-D/HO. Once T-CO was notified by T-driller, he signaled for T-R3, who was the least experienced of all roustabouts but claimed he had previous drill floor experience, to come to the rig floor at approximately 1230 hours. T-CO had performed no evaluation as to T-R3's previous work experiences.

When T-R3 went to the rig floor, T-D held an additional verbal THINK drill with the drill crew to discuss the safety issues involved with pulling and laying down the drill pipe since T-R3 was new to the TODCO 207 rig floor. T-D directed T-F1 and T-F2 to initially demonstrate and then observe T-R3 making the hitches since, it was his first time on the rig floor of the TODCO 207. T-R3 was given his responsibilities on both the pulling of the drill pipe and well control responsibilities if an incident were to occur, even though he had never been trained in well control. T-D had performed no evaluation as to T-R3's previous work experiences.

While T-R3 was on the rig floor, he was solely responsible for attaching the nylon strap below the tool joint to allow T-D/HO to make the lift, and then walk the drill pipe to the V-door once it was lifted by T-D/HO. TR-3 acknowledged there was evident pipe dope on all of the drill pipe joints being lifted, with some having more pipe dope than others. *For an indication of the condition of the nylon strap, see Attachments 2-6.*

Prior to T-R3 making any connections to the drill pipe, T-F1 showed him the proper way to make the cinch three to four times according to T-F1. T-F1 said that he watched T-R3 make a few connections and then resume pulling the drill pipe. According to T-F1, T-F1 corrected T-R3 for attaching the nylon strap too high on the drill pipe tool joint. T-F1 said that he “had to set the joint down and explain to T-R3, because if it [the nylon strap] got on the tool joint the pipe would slip out.” T-F2 said that on one occasion the drill pipe was set higher than previous tool joints in the mousehole, which required T-F1 to cinch the strap below the tool, because T-R3 was having difficulties because of the tool joint’s height. Besides monitoring T-R3 make every strap connection, T-F1 was also responsible for operating the tongs, breaking drill pipe connections, and signaling to T-D/HO to lift the drill pipe. *For a depiction of the location of pertinent personnel at the time of the accident, see Attachment 7.*

T-R3 said that he had to get assistance from T-F1 two to three times because the cable above the nylon strap would get caught up in the derrick. Once it got caught up, T-R3 was not able to move the drill pipe to the V-door. T-F1 would then free the cable by pulling and maneuvering the drill pipe. Testimony approximated that between the 30 and 50th lift on the drill floor since T-R3 had arrived, the drill pipe came free of the strap and fatally struck T-F3(D) in the head/shoulder region at 1310 hours.

Prior to the drill pipe striking T-F3(D), T-R2 witnessed a loose strap connection on the drill pipe while it was suspended above the rig floor, prior to its falling, and he thought the strap might come off. After T-R2 saw this, he hollered at T-R1 to get off of the catwalk, because “it looked like it wasn’t on there real good.” *For a depiction of the single choker hitch used during the laying down operation and the location of the strap on the pipe as viewed by T-R2 on the fatal lift, see Attachment 8.*

T-R3 was approximately 6-inches from the V-door when the drill pipe fell to the rig floor. T-R3 said, “It seemed to me that T-D/HO had let the pipe down, because there was no bang.” No other

rig floor personnel heard a bang or the drill pipe hitting the roll bar in the derrick. Nor did they witness the drill pipe falling from the nylon strap; however, TR-3 recalls, “I heard T-D/HO say ‘Get out of the way!’”

T-F1, T-F2, and T-F3 (D) were beginning to break another drill pipe connection and were not looking in the direction of the suspended drill pipe. T-CO and T-D had obstructed views from their standpoints. T-R1 and T-R2 could not see the drill pipe once it was lowered to the V-door. T-R3 was looking at the bottom of the suspended drill pipe while pushing the drill pipe to the V-door with his right shoulder. T-D/HO was the only member of the rig crew who would have seen what happened, but he “just kind of went blank right there.” Yet, T-D/HO managed to tell TR-3 to “Get out of the way.” Once the incident took place, no one at the scene looked up at the sling or derrick to see exactly what occurred.

After T-F3(D) was struck by the drill pipe, he was not conscious according to interview statements. He was reportedly bleeding from the nose and mouth, but had a pulse. T-F1 was the first responder and was with T-F3 (D) up to the time of his evacuation from the TODCO 207. T-OIM placed a call for a helicopter; however, the helicopter did not arrive until 1430 hours. Prior to his evacuation, T-CO lifted T-F3(D) and T-F1 to right below the helideck area to expedite moving T-F3(D) to the helicopter. The helicopter transported him to Lake Charles Memorial Hospital, and he was pronounced dead at approximately 1530 hours.

Following the incident on the TODCO 207, the drill pipe pulling and laying operation was subsequently discontinued temporarily. The rig contacted J. Connor Consulting to notify all regulatory agencies at 1605 hours. TODCO legal counsel and the rig manager arrived at the rig at 1930 hours to conduct interviews. All personnel who were involved in the incident were questioned by TODCO’s legal counsel and given the opportunity to go home. Employees indirectly involved were given the chance to go home as well. The drill pipe that struck the victim and the nylon strap used to lift the drill pipe were sent to Houma.

Post-Accident

The following are taken from the interview responses given to panel members by B-OM and T-VPHSE.

Badger:

As to questions regarding Badger performing an investigation into the fatality following the incident, B-OM stated that on the weekend following the incident, “We discussed it with senior people, Jody Conner, in terms of our compliance with our SEMP. At the time we had to make an operating decision whether or not it was worthwhile to take the step of sending people offshore and conducting what looked like was going to be a fruitless investigation. People were removed from the rig and not going to be available for eyewitness accounts. I think we had a reasonable expectation that we would be going through an investigation like that just for drill, counter-balanced against safety aspect of putting people on helicopter in fairly high winds in December and just making a day trip to say we did it. We elected not to do that at that time.”

From weather reports in the Sabine area near the TODCO 207 on Saturday, December 2, it was confirmed from data acquired from a weather buoy that the highest winds of the day were recorded at 0900 hours at 12 kts, or 13.8 mph.

At the time of the interview, approximately three months after the incident, Badger had not conducted a formal investigation of the fatality, although the Badger Safety and Environment Management Program (SEMP) requires that investigations begin no later than 48 hours following the incident.

In response to questions regarding why the incident was not investigated, it was stated that Badger’s SEMP is production oriented. It is noted within section 1.0 of the Badger SEMP document that SEMP is a management tool that applies to all Badger facilities for “drilling,” production, and construction operations.

Further, the operating decision was made that an investigation would be “fruitless” because eyewitnesses were removed from the rig, and B-CR’s comments led Badger to believe that TODCO had “pretty much closed ranks.” It was further stated that the safety aspects of flying

offshore outweighed a reasonable expectation that an onsite investigation would be more of a drill.

With respect as to whether Badger has required TODCO to perform an investigation, it was stated that Badger knows that TODCO has completed the initial phase of the facts gathering. It was also stated that Badger has not formally requested an investigation report.

TODCO:

It was stated that Badger did not prompt TODCO to investigate. TODCO had informed the panel that they were in the process of performing an investigation, but the MMS has not received a report on the investigation as of the date of this report.

After the incident, TODCO replaced the nylon straps for similar operations by requiring the pulling of drill pipe on every TODCO rig worldwide to be performed with a threaded lifting sub. T-VPHSE said that the decision to replace the strap “wasn’t recognizing that use of the nylon strap was in anyway unsafe.” He stated that the decision represents a desire to take action immediately to prevent the likelihood of reoccurrence. *For photo of the lifting sub, see Attachment 9.*

Other than replacing the nylon strap with the threaded lifting sub, no other operational changes were made in regard to the WC 240 fatality. A letter was sent to the entire TODCO fleet worldwide to inform them of the change from the nylon strap to the lifting sub.

Employee Training

Badger Training Policies

In accordance with Badger’s SEMP document dated July 2005, operating location supervisors, similar to the role of B-CR, must verify that all who work on Badger leases are trained in the work practices necessary to perform their jobs safely. Further, contractors must ensure that their employees receive appropriate training and are informed of potential hazards.

There was no record of any review performed by B-CR or Badger on the training of TODCO personnel. The following is a result of the panel’s review of TODCO personnel training records within personnel files at the time of the incident. (Note – these records do not include T-F3[D] and were supplied to the MMS shortly after the incident). It is noted that Badger supplied the MMS with well control data for personnel that contradicts what is presented below during a Subpart O audit, and the MMS is in the process of validating the information presented to them.

Employee	Experience w/ TODCO (yrs) at time of incident	Performance Evaluation*	Rigger Training . Certification	Crane Operator Certification	Well Control	TODCO Orientation Rig
T-D/HO	3	No	Yes - Expired	No	Yes	Yes
T-CO	2	Yes	Yes	Yes	No	No**
T-OIM	15	Yes	Yes - Expired	No	Yes	No
T-R1	12	Yes-Demotion Reccomended	Yes	Yes	Yes-Expired	No
T-F1	1	No	No	No	No	Yes
T-R3	<1	No	No	No	No	Yes
T-R2	3	Yes	Yes - Expired	No	No	Yes
T-F2	1	Yes	No	No	No	Yes
T-Driller	<1	No	No	No	Yes	Yes

* - According to testimony, every TODCO employee is required to be evaluated once every 12 months, 90 days for Roustabout 2.

** - No record in personnel file; however, in testimony he claimed he participated.

The above table reveals the following:

1. Four employees out of nine from the night shift of the TODCO 207 had not been evaluated in accordance with TODCO personnel policy on performance evaluations noted within testimony.
2. Seven employees out of nine from the night crew of the TODCO 207 had not received Rigger or Crane Operator certification, or the certification had expired.
3. Although the incident was not related to well control, three of the five employees on the rig floor did not have well control certification. TR-3 had specific well control responsibilities but never had any prior training.
4. Three of the nine employees had no record of participating in the TODCO orientation rig within their personnel files.

TODCO Training Policies

According to T-VPHSE, all new, not necessarily inexperienced, employees are required to participate in training at the TODCO training rig. T-VPHSE referred to the training rig as an “orientation” rig and the setting is not truly reflective of what new employees would see in the field. TODCO utilizes the rig “to introduce folks to the culture that they’re trying to build inside the company....how they should conduct themselves.....and to give them an overview of the kind of life and working environment they’re likely to find.” The orientation rig is “not designed to take someone who’s been maybe flipping burgers for the last couple of years into a fully qualified floor hand or roustabout.” All personnel interviewed during the investigation mentioned the “orientation” rig to be their only formal training experience while at TODCO.

During the training at the “orientation” rig, new employees are given multiple documents, such as an HSE manual and a *Riggers Training Handbook*. These documents contain a large amount of data that the employees are tested on daily, along with field tests. A passing grade is required to move onto a field rig. T-R3 referred to the “orientation” rig as a “boot camp.”

T-VPHSE is not “definitive” with what is taught at the “orientation” rig, but he stated, “it wouldn’t surprise” him if the nylon strap used during the incident was part of the curriculum, because “it has been recognized inside the company as a ‘perfectly’ safe way to move drill pipe.” However, following the incident, the Senior Vice-President of Operations sent out a notification to all rigs worldwide to replace the nylon straps with a threaded lifting sub. Besides the change of attitude towards the nylon straps, there is no mention of how to make proper cinches with nylon straps within the *TODCO Riggers Training Handbook*.

Following new employees’ departure from the “orientation” rig, TODCO relies heavily on their receiving hands-on training overseen by supervisors and more experienced hands. T-R1 stated he “has given more training than he has received.” T-R1 has been in the industry since 1975, and stated that he is responsible for “informally training” new hands. During T-R1’s informal training, he focuses on “keeping them out [of] trouble” and instructing them on the “proper way to handle certain operations.” Even though it was noted in T-R1’s TODCO evaluation that (1) T-R1 had been recommended for demotion since he “was not a leader that can do his job or train his men” and (2) was given a disciplinary notice for filing a late accident report, he indicated that he

remained the “experienced” hands-on “informal” trainer to personnel like T-R3, who was on his night shift on the TODCO 207.

TODCO also requires employees to participate in weekly safety meetings, which are held on the weekend during their off-shift time. For participating in these safety meetings, each employee is paid overtime.

With respect to pre-job training and hands-on training that were offered to T-R3 in regard to rig floor operations, T-R3 could not recall the names of certain common drill floor equipment, such as tongs, spinner hawks, and tugger. According to T-F1, “there is no floor hand training at the training rig.” T-D was confident that T-R3 was qualified to perform the attaching of the strap to the drill pipe, push the drill pipe to the V-door, and perform any required well control tasks discussed with him during a “three to four minute” THINK drill, even though T-R3 had no documented experience or training.

In accordance with Section 4, entitled “Equipment and Inspection of Gear,” within the *Riggers Training Handbook* issued on the TODCO “orientation” rig and dated September 21, 2004, “all hoist operators must be qualified to operate or use the specific type of hoist.” The referenced handbook also requires all pre-use inspections of crane/hoist equipment, such as a nylon strap, to be inspected by a “qualified operator.”

The *Rigger Training Handbook* defines a qualified operator as “a person designated by the employer who has appropriate offshore experience and training. They must be qualified to safely operate the cranes on which they have been trained. They must also be qualified to perform pre-use and monthly inspections. This person must also be a qualified rigger.”

A qualified rigger is defined as, “a person with training and experience who has successfully completed an approved riggers training program, crane load rigging will only be performed by a qualified rigger, a qualified operator is a qualified rigger.”

Lastly, a qualified inspector is defined as “in addition to meeting requirements of a qualified operator, the person must have successfully completed courses on crane and hoist maintenance and troubleshooting; they will be qualified to perform initial, quarterly and annual inspections.”

The panel found no documentation that T-D/HO had received any training in operating air hoists similar to the one in operation on the TODCO 207 prior to the incident; however, the panel was able to determine that his rigger training certification had expired before December 1, 2006. Therefore, by TODCO *Riggers' Training Handbook* definition, T-D/HO was not a “qualified operator” on the day of the incident.

The panel also determined that T-F1’s rigger training certification had expired prior to December 1, 2006. Consequently, T-F1 was not a “qualified inspector” to perform the pre-use inspection of the nylon strap in use on the day of the incident.

Badger Safety Management

The following are taken from the interview responses made by B-OM and B-CR to panel members.

B-OM

With respect to Badger’s drilling contractors, it was stated that Badger, because of the production orientation of their SEMP, relies on the contractor’s extensive safety systems in place, Badger’s experience with contractors, and reports from ISNetworld. ISNetworld is an online contractor database that helps operators satisfy governmental and operator-specific record keeping requirements and reduces the cost of managing and prequalifying contractors. However, it was also stated that Badger never reviewed or evaluated TODCO’s safety manual, did not require that contract employees have written job descriptions, nor did they review the training records of TODCO personnel.

With respect to monitoring a drilling contractor’s performance, Badger does not conduct a safety audit “in terms of sitting down with a vendor in their office.”

Regarding the role and main function of Badger’s company representative (B-CR) on the TODCO rig, it was stated that he is Badger’s “eyes and ears” on the rig and is familiar with Badger’s safety plan. Regarding the B-CR’s authority to stop anything that he observes on the rig

to be abnormal or a safety concern, it was stated that Badger “expects him to feel” that he has shut-down authority.

When asked how Badger’s company representatives’ duties and responsibilities are communicated to “them,” the response centered only on the B-CR at the time of the incident and referred only to Badger’s satisfactory experience and comfort level with him. The question was, in effect, not answered. With respect to B-CR’s participation in the pre-shift safety meeting, it was stated that it is Badger’s expectation that the meeting would be run by the TODCO people and that they would welcome the presence of the company man, meaning B-CR.

B-CR

The main responsibility of the company representative is to ensure that the operation is compliant with government regulations and to transmit reports from contractors to Badger. In response to inquiries as to the existence of any additional responsibilities, the B-CR stated there were none and then added that he is “more or less (an) observer” and makes sure regulations are followed. He then added, “and safety and environmental.” The B-CR walks around the rig twice a day, once each shift.

With respect to his reaction in the event that he observed an unsafe activity, B-CR responded that he would notify the contractor and expect them to, in essence, remedy the situation.

He did not recall any reference to a new roustabout in the pre-shift safety meeting, did not know a new hand had arrived, and had no expectation that such information would have been shared with him by the contractor. B-CR’s name was not listed on the pre-shift safety meeting list of meeting attendees.

With respect to Roustabout 1 and 2 classifications, B-CR was not aware of such a classification and was not aware of any evaluations of any individuals on the rig. He stated that he does review the training records of rig personnel with respect to well control and verifies the certification of crane operators.

With respect to laying down pipe, B-CR considers the use of the strap as the “safest way” with which to perform the task. He continued that the use of a lifting sub is “probably equal” in safety.

B-CR stated that he was familiar with Badger's safety plan.

B-CR stated that the reports from the contractor that he submits to Badger do not include any documentation regarding the pre-shift safety meeting.

TODCO Safety Management

The following are taken from the interview responses made by T-VPHSE to panel members:

The T-VPHSE stated he did not have a "detailed working knowledge" of the *TODCO HSE Manual* and stated it is difficult to define what an HSE issue is. It was established by the panel during the interviews that the *HSE Manual* is a principal, official working safety document of TODCO. When asked if there was any communication between HSE and HR regarding specific requirements he would like to see in all TODCO employees, T-VPHSE responded, "Yes. But it's -- it's not related to knowledge and skills. It's related to the softer issues of attitude and morale and making -- making safety personal. So I'll get directly involved in those softer issues."

The current HSE document, dated 2004, was prepared by the Operations group with technical support from HSE, Purchasing, and Accounting.

The T-VPHSE didn't know if TODCO has any written job descriptions for its roustabouts. However, job descriptions for TODCO roustabout positions do exist and were made available to the panel after the interviews.

The TODCO Training Rig, which all TODCO field personnel must attend, is considered to be "more of an orientation rig to introduce people to the company" and its culture and is "certainly not designed" to produce a "fully qualified floor hand or roustabout." Additionally, the training rig is not designed to expose people to the kind of work environment that they will likely face. The T-VPHSE was not aware of the training curriculum or how testing is performed on the training rig.

Training is an HR (Human Resources) function and not an HSE function. HSE relies solely on HR to set forth policy to require specific training. HR oversees the training rig and also anything related to the skills, competency, and knowledge of its employees. HR personnel determine the

competency for field placement determinations. Despite the extensive HR responsibilities that are safety related according to the T-VPHSE, he did not know who those personnel are.

HR has discussions with OIM's on the competency of persons boarding the rig. The panel found no evidence indicating that any such communication took place in the case of T-R3's boarding.

Employee evaluations are considered an HR function. Everyone on a rig has a written evaluation annually; however, the T-VPHSE does not know where they are kept.

The OIM is responsible for the safety of everyone on the rig.

In a response to a question raised by the panel if T-VPHSE set forth any training requirements for TODCO employees or if he solely relies upon HR, he responded, "It's very difficult to say, you know, what is an HSE related issue? If you looked at the -- the skills for well control or prevented maintenance that mechanical and electrical supervisors go through, then indirectly you can say it's all safety related. You know, if someone doesn't adequately service a top drive, then they..."

When asked is if T-VPHSE knew if there was an HSE manual on every rig, T-VPHSE responded, "Well, to the best of my knowledge, each rig has three copies."

Conclusions

The Accident

It is concluded by the panel that, as a joint of 5-1/2 inch drill pipe was being moved to the V-door as part of a laying down operation, the pipe slipped out of a supporting cinched strap, resulting in the drill pipe falling and fatally striking a floorhand.

Causes

Mechanical/Actions:

1. It is the conclusion of the panel that, as the last joint of pipe was being pushed to the V-door, the necessary slackening of the hoist cable and an improperly cinched strap caused the eye of the cinched strap to ride up onto the pipe's tool joint and slip off the drill pipe.

The exact manner in which the strap was improperly cinched is not known. It is concluded that the strap was placed either 1) too high on the joint with the eye of the strap either on the bevel of the tool joint or on the joint itself or 2) too low on the joint, thereby allowing the momentum of the strap, as the pipe was being lifted, eventually to slip over the bevel and eventually off the drill pipe's tool joint. **Therefore, the improper cinching of the strap onto the pipe is concluded to be a cause of the incident.**

In either of the two cinching possibilities, it is concluded that, to some degree, the mud on both pipe and the strap lessened the friction between the two and thereby aided the pipe sliding out the strap. No conclusion could be drawn as to the degree the amount of mud on the pipe would have affected the integrity of the strap/pipe connection had the strap been properly cinched with no other negative mechanical influences being present.

2. It is the conclusion of the panel that it is also possible that, as the pipe was very close to the V-door, T-D/HO lowered the pipe excessively, i.e., to the extent that the too much slack developed in the cable, thereby allowing the improperly cinched strap to loosen further and eventually separate from the pipe. Statements made by T-R3 concerning the lowering of the pipe immediately prior to the pipe falling leads the panel to conclude that this could reasonably have

occurred. **Therefore, excessive lowering of the pipe near the V-door is concluded to be a possible cause of the incident.**

3. It is the conclusion of the panel that it is also possible that, as the drill pipe was being lifted from the mousehole either the drill pipe or the hoist cable became momentarily hung up in the derrick. The manner in which that occurred would have determined the amount of jarring experienced in the lift, which in turn would have influenced the amount of movement of the strap over the pipe's tool joint. While this has been concluded to be a very reasonable possibility, any conclusion as to the probability of such a hang-up in the derrick on the fatal lift is made difficult by conflicting interview statements regarding the witnessing or the hearing of such hang-ups. **Therefore, the hanging up of the pipe or cable in the derrick is concluded to be a possible cause of the incident.**

It is concluded that if such a hang-up did occur (1) a properly cinched strap would have withstood the resultant jarring reaction, and (2) an improperly cinched strap would have reacted to the resultant jarring by moving further up onto the pipe tool joint, thereby increasing the likelihood of a strap/pipe separation.

Inexperience:

It is the conclusion of the panel that T-R3's lack of experience in performing the task of securing the drill pipe with a strap was a cause of the accident, as was his general lack of experience with drill floor activities. During the interviews, T-R3 stated at one point that he didn't remember if he had ever used nylon straps in that type of lifting activity. Further, his tenure on the rig implies unfamiliarity with the rig, as well as the drill floor activities and the TODCO hands with whom he would be working. T-R3 was also expected to perform at the same pace of the experienced hands while working on the rig floor.

Supervision:

The decision by T-CO to send T-R3 to the rig floor is considered a possible cause of the accident. However, T-CO did not violate any policy set forth by TODCO management that

would have prohibited such a decision. In choosing T-R3 to work the rig floor, T-CO chose the least experienced of the three roustabouts available, one whom he had not officially evaluated, one for whom he was unaware of evaluations from previous supervisors, and one over whom he had very limited supervision and observation experience. T-CO chose T-R3 on the basis of his willingness to work the rig floor, his saying that he had had experience relieving roughnecks, and his having attended the training rig. It is the conclusion of the panel that these were not sufficient reasons to allow the lowest ranked roustabout and the newest member of the rig to perform a task in which he was responsible for the suspension of drill pipe in a occupied work area and ultimately a task in which his actions did contribute to the drill pipe, which was approximately 600-pounds, falling.

The decision by T-D to allow T-R3 to be responsible for securing the nylon strap to the pipe is considered a cause of the accident for some of the same reasons listed immediately above. However, T-D did not violate any policy set forth by TODCO management that would have prohibited such a decision. Knowing that T-R3 was new to the rig and with no knowledge of his experience, T-D allowed T-R3 to be responsible for a task, albeit with some guidance from more experienced hands, in which he was responsible for the suspension of drill pipe.

Training:

It is the conclusion of the panel that the TODCO training rig does not adequately train employees to work on a rig floor. Even though TODCO relied heavily on its hands-on training, TODCO failed to have any policy in place to prevent employees like T-R1, who “was not a leader that can do his job or train his men,” from providing hands-on training to new employees. TODCO was also unsuccessful in capturing instructions on how to make attachments properly to drill pipe using nylon straps, the type of strap used within the accident, within the TODCO *Rigger Training Handbook*. **The lack of formal training and the quality of hands-on training provided by TODCO to its employees is considered a cause of the accident.**

Management:

Badger:

It is the conclusion of the panel that Badger's safety management was overly reliant on the safety systems of their drilling contractor, TODCO. It is also concluded that the responsibilities of their representative on the rig, B-CR, with respect to safety issues were ineffectually nonspecific as B-CR monitored each shift once a day by walking around the rig and truly had no authority to stop work being performed by TODCO according to testimony. Had Badger been aware that a new man had arrived on the rig, was the lowest rated roustabout, within days was going to be assigned to the rig floor with the task of securing drill pipe for suspension in a work area, and whose supervisors were unaware of any previous evaluations or work experience, it is reasonable to conclude that concerns would have been raised on Badger's part with respect to the prudence of such a situation from a safety perspective. It is further reasonable to conclude that such informed concerns would have led to at least the questioning of such a decision, and that questioning in turn could reasonably be expected to have resulted in either closer supervision of T-R3 or replacing him for the given task, thus possibly preventing the accident.

It is therefore the conclusion of the panel that a lack of specific safety responsibilities of the Badger company representative on the rig and Badger's over-reliance on TODCO's safety systems is a possible cause of the accident and, in effect, represents a serious lack of onsite safety responsibility with respect to activities on the lease for which they are the designated operator.

TODCO:

It was concluded by the panel that TODCO's safety program in general, the one on which Badger relied heavily, contributed to the incident in that the panel found no evidence of any prohibition in the program regarding the actions taken by T-CO and T-D in allowing T-R3 to perform the task of securing the pipe with the nylon strap, actions that themselves were considered to be causes of the accident . **Therefore, it is concluded by the panel that the ineffectiveness of TODCO's safety program with respect to a lack of such a prohibition and apparently in general was a cause of the accident.**

In concluding the reasons for the ineffectiveness of TODCO's safety program with respect to the subject accident, the following were considered:

A. The Vice President of the Health, Safety, and Environment department of TODCO stated:

1. He was not aware if written job descriptions existed for roustabouts or the difference between the classifications of Roustabouts 1 and 2;
2. He was not familiar with the curriculum of the training rig;
3. He did not know what the personnel type was or the skill set of those types in the Human Resource department, the department responsible for training and competency determinations for field placement;
4. He viewed the "training" rig more of an orientation vehicle than a training vehicle;
5. He wasn't sure if the referenced 90-day evaluation period for roustabouts is written policy;
6. He didn't know why there was a rush to substitute the lifting sub for the straps;
7. He had difficulty defining what an HSE related issue is; and
8. He was uncertain as to the disposition of HSE manuals on rigs.

B. The panel concluded that the examples that the T-VPHSE offered immediately after stating his difficulty in defining an HSE issue, one of which was incomplete, did not constitute a satisfactory clarification of the concept of an HSE function and further led the panel to conclude that the T-VPHSE did not possess a clear, functional definition of an HSE function.

C. Communication between HR and HSE regarding employees was not related to knowledge and skills, but rather to softer issues of attitude, morale, and making safety a personal issue.

D. The panel concluded from an answer given in response to the question as to the number of HSE manuals on each rig that T-VPHSE did not have a convincing knowledge of the number and location of HSE documents within TODCO's fleet.

Considering all of the above, in addition to the aforementioned lack of the prohibition against the decisions of T-CO and T-D, **the panel concluded that the general ineffectiveness of TODCO's HSE department was a major contributing factor in the ineffectiveness of**

TODCO's corporate safety program and is therefore concluded to be a cause of the accident.

Recommendations

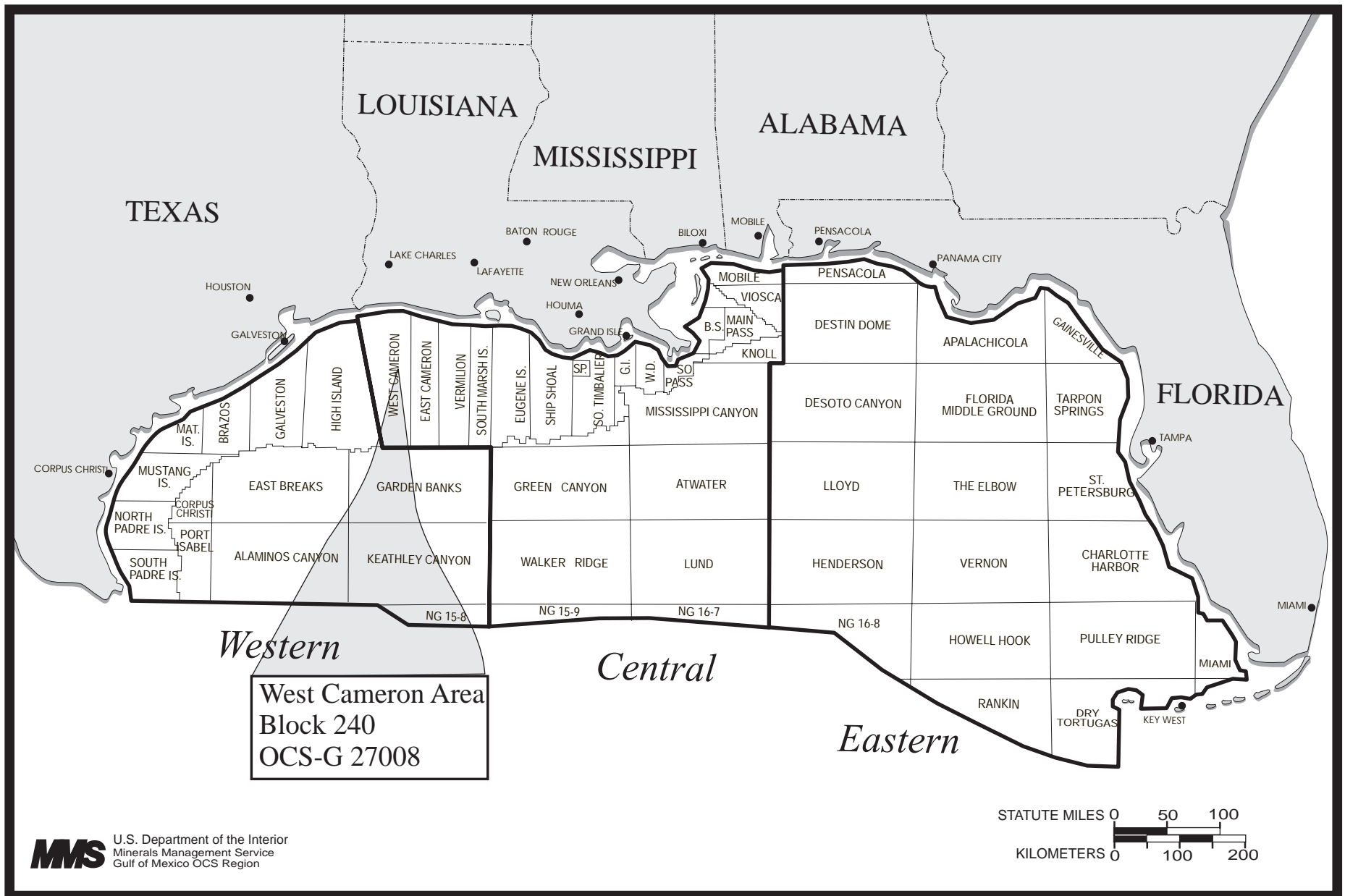
Safety Alert

The MMS should issue a Safety Alert to all lessees and operators containing the following:

1. A brief description of the accident,
2. A summary of the causes, and
- 3: The following recommendations:
 - a) Lessees and Operators should review their policies regarding the selection of contractors from a safety perspective and the safety performance monitoring of the selected contractors. Policies should include a complete review of the contractors' corporate safety plans.
 - b) Lessees and Operators should communicate clearly and in writing what is expected of their field representatives, especially with respect to the issues of safety enforcement and monitoring.
 - c) All personnel involved in rigging/lifting operations, not only crane but **all**, should have formal rigger training prior to participating in such operations.

Regulation Change

The MMS should modify 30 CFR 250.108 to include all lifting operations associated with oil and gas operations.



Location of Lease OCS-G 27008, West Cameron Area Block 240.

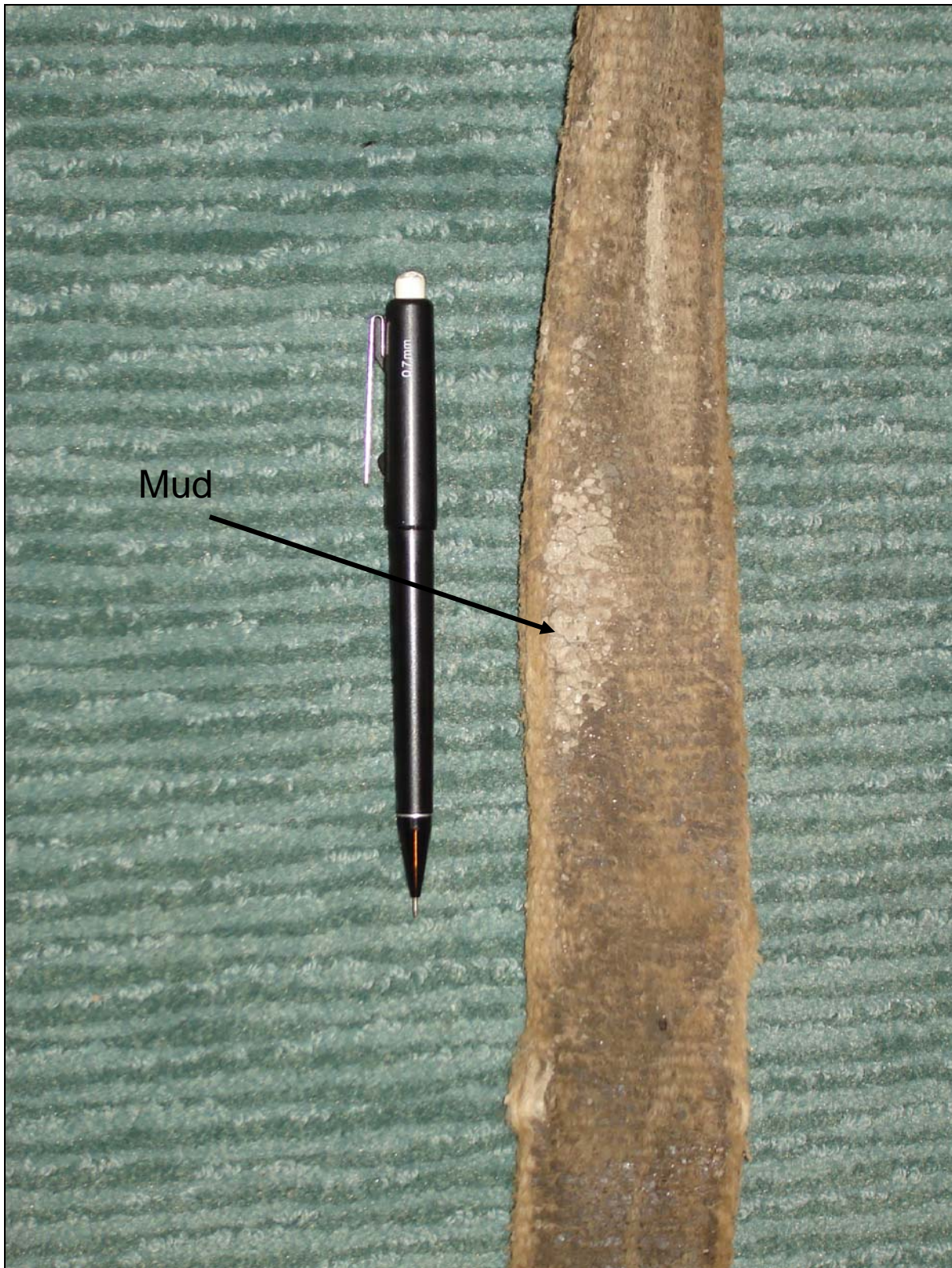


Photo of Mid-Section of Nylon Strap used during the WC 240 Fatality

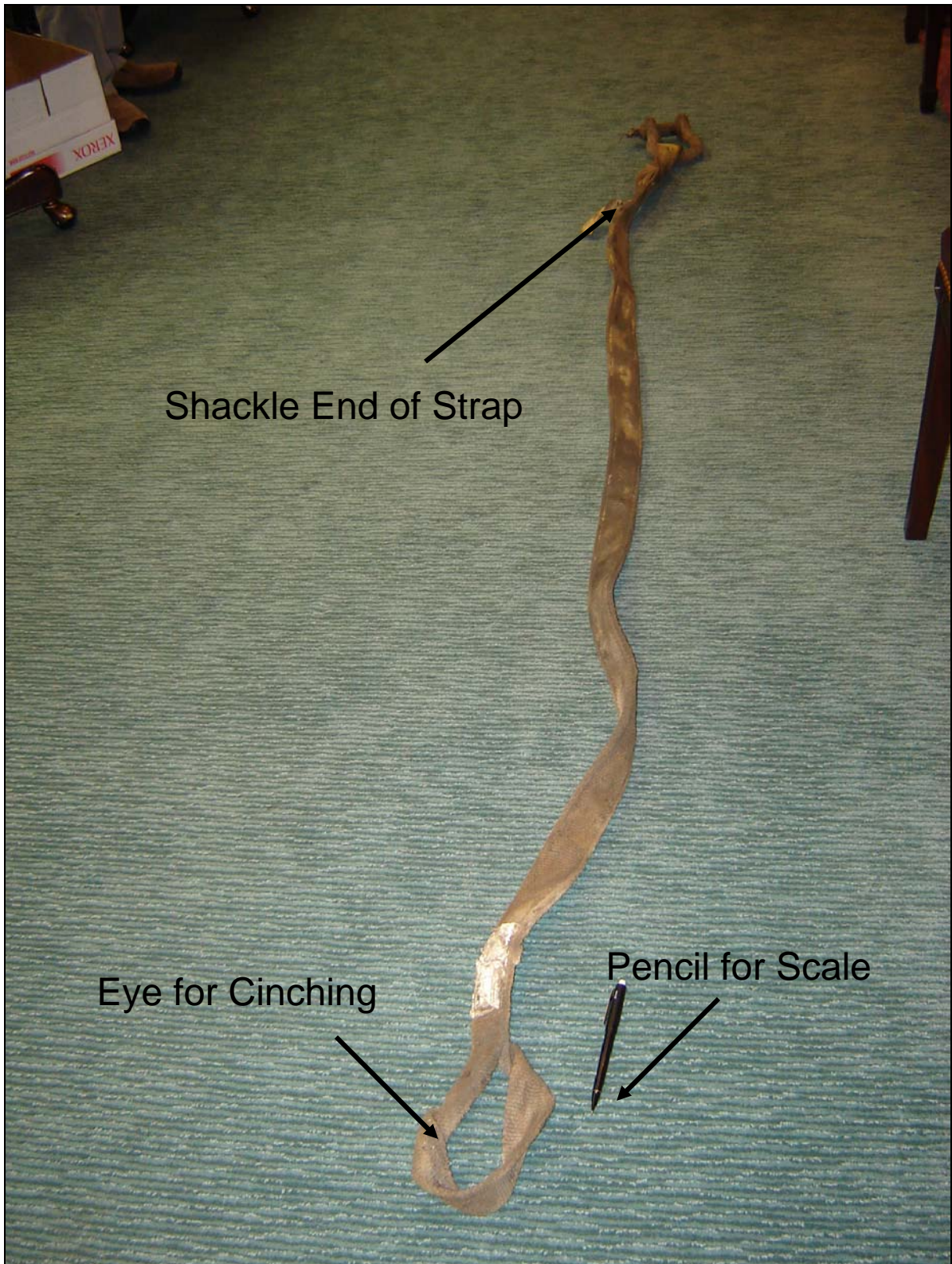


Photo of Nylon Strap used during the WC 240 Fatality

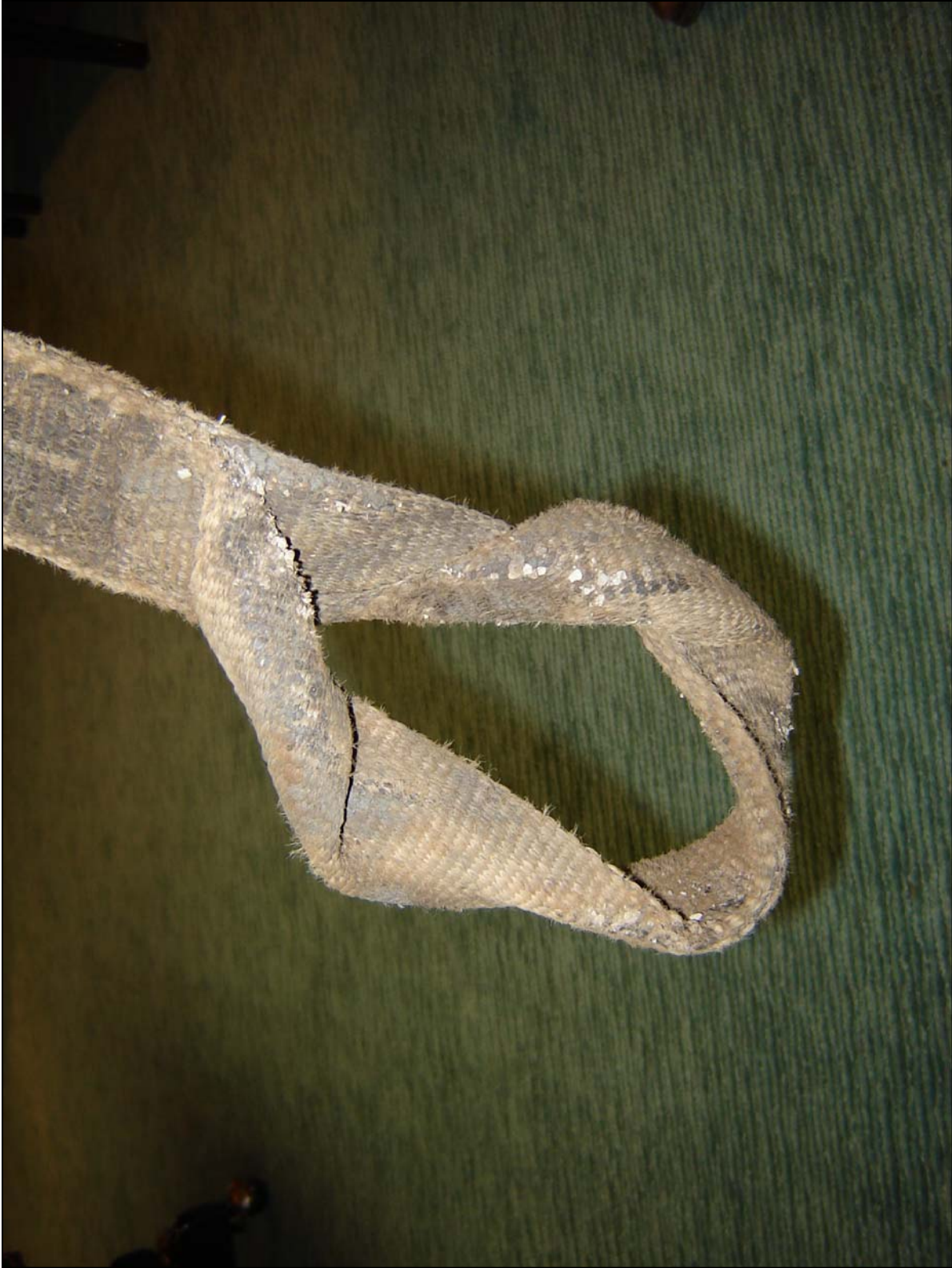


Photo of Nylon Strap Eye

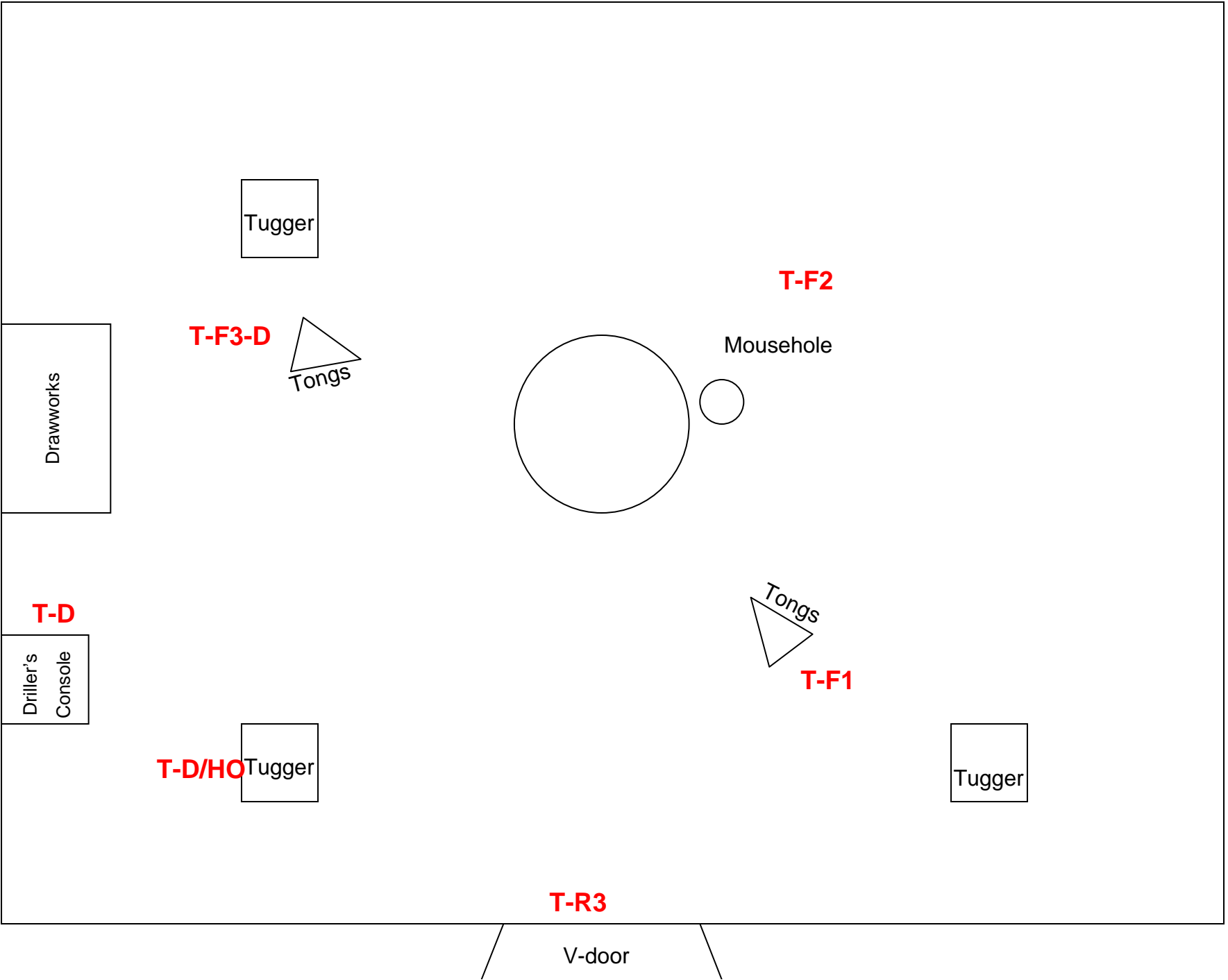


Photo of Nylon Strap with Eye



Photo of Shackle at End of Nylon Strap

Layout of the TODCO 207 Rig at Time of Fatality



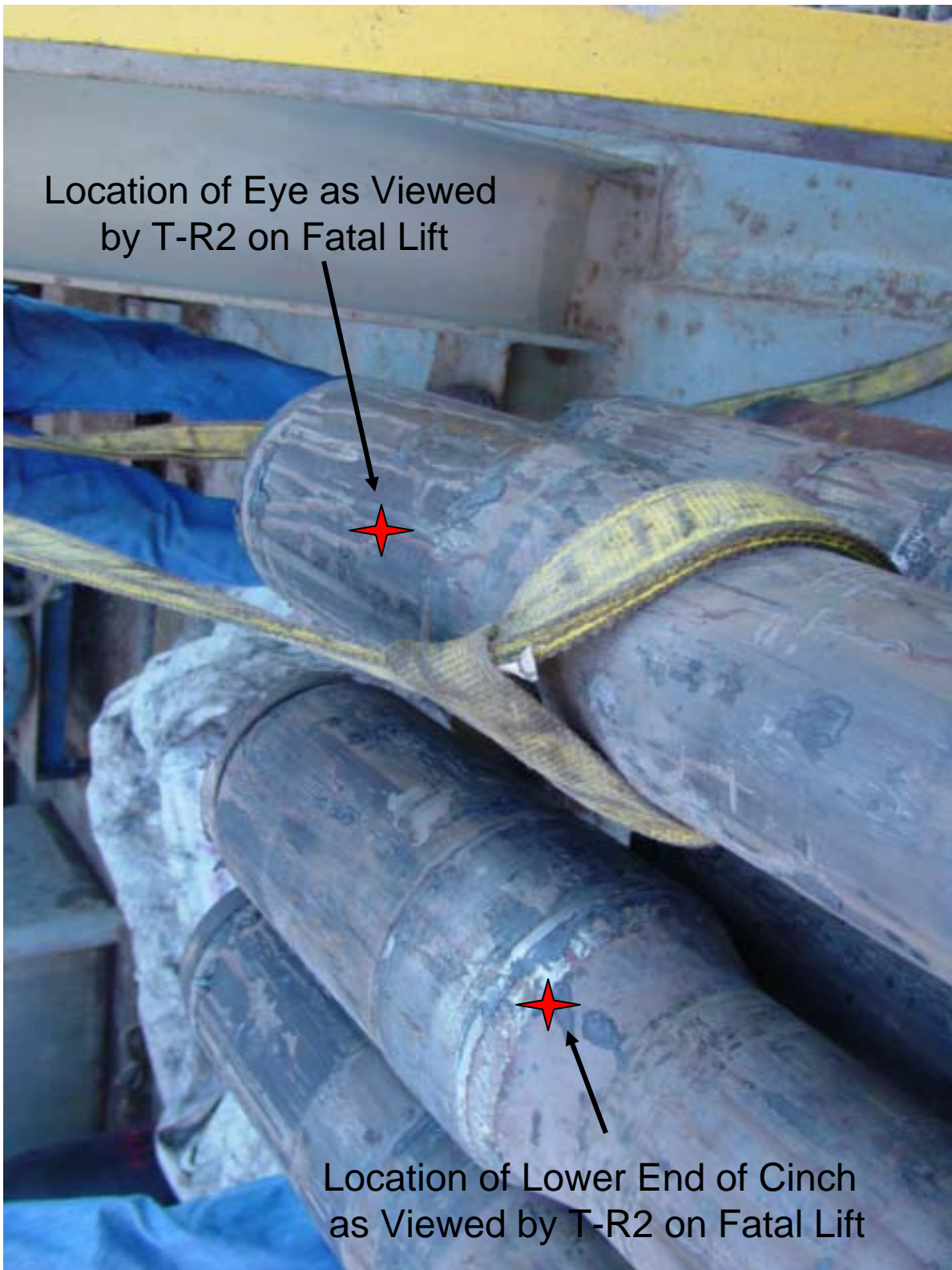


Photo of Depiction of Single Choker Hitch



Photo of Lifting Sub that Replaced the Nylon Strap