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OCS Report  
MMS 2004-078

**Investigation of Fatal Accident  
West Cameron Block 424, Well No. 1  
OCS-G 24745  
7 April 2004**

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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Jack Williams – Chair  
Glenn Woltman  
Bill Olive

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## **Investigation and Report**

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### **Authority**

A fatal accident occurred on 7 April 2004 at approximately 0245 hours aboard the Pride Offshore, Inc. (hereinafter referred to as “Contractor” or “Pride”) jack-up rig *Florida* (hereinafter referred to as the “Rig”) during the drilling of Well No. 1 for Cabot Oil and Gas Company (hereinafter referred to as “Operator”) on Lease OCS-G 24745, West Cameron Block 424, in the Gulf of Mexico, offshore the State of Louisiana.

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 15 April 2004, the following personnel were named to the investigative panel:

Jack Williams, Chairman – Office of Safety Management, GOM OCS Region  
Glenn Woltman – Office of Safety Management, GOM OCS Region  
William Olive – Lake Charles District, Field Operations, GOM OCS Region

### **Procedures**

On the morning of 7 April 2004, two inspectors from the Department of the Interior, Minerals Management Service (MMS) district office in Lake Charles, Louisiana, visited the site of the fatal accident to assess the situation, take photos, and statements. On 8 April 2004, a member of the investigative panel received written statements from the medic, driller, and tool pusher of the Rig.

On 22 April 2004, MMS panel members held a telecom with the Operator’s operations management staff and requested the International Association of Drilling Contractors (IADC) morning drilling reports, and tasks and location assignments for the Contractor’s Rig crew at the time of the incident. That same day, MMS panel members had a telecom with management from

Applied Drilling Technology Incorporated (ADTI), who had been contracted by the Operator to undertake the drilling management on the subject well. MMS panel members had a telecom with the Contractor's claims manager, and requested a copy of the Job Safety Analysis (JSA) signed on the day of the accident, as well as all Contractor-related safety manuals and guideline materials pertaining to rigging and hoisting operations.

On 18 May 2004, members of the MMS panel traveled to the Contractor's Houma, Louisiana office to interview the Contractor's Rig crew and management, and on 25 May 2004, members of the panel conducted telephone interviews with other Contractor representatives not previously interviewed. On 25 May 2004, MMS panel members received a copy of the Contractor's Safety Guide 14, company policy for using man-riding tuggers and, by phone, discussed those policies with Contractor's management.

In addition to the interviews, other information was gathered at various times from a variety of sources. This information included the following reports and statements:

- Daily Drilling Reports, 02 April 2004 – 07 April 2004;
- Operator's Drilling Plan, Well No. 1, and Permit to Drill;
- Operator's WC-424 Incident Investigation Report, 07 April 2004;
- Pictures of equipment, layout, and orientation of Rig;
- Diagrams of rotary barricade, tugger, and shackle and swivel;
- Interviews with Operator's drilling management, engineering, operational personnel, Contractor drilling management, operational supervisors, and operational personnel;
- Written statements from the Rig medic, tool pusher, ADTI representative, and driller on duty;
- Pride JSA dated 7 April 2004, as revised April 2004;
- *Pride Personnel Safety Manual (SG-14)*, issued April 2002;
- Pride job description for the rig safety and training representative;
- A Crane Tech expert's opinion on standard rigging practices and equipment;
- Federal Aviation Administration sponsored studies on fatigue.

The panel members also met, discussed the evidence, and reviewed progress of the investigation on a number of occasions. After having considered all of the information available, the panel produced this report.

## **Introduction**

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### **Background**

Lease OCS-G 24745 covers approximately 5,000 acres and is located in West Cameron Block 424, Gulf of Mexico, off the Louisiana Coast (*for lease location, see Attachment 1*). The lease was issued effective 1 July 2003 to Cabot Oil and Gas Corporation as 75 percent interest leaseholder and designated operator, with Palace Exploration Company owning a minority interest of 25 percent.

On 2 April 2004, Cabot Oil and Gas Corporation contracted Applied Drilling Technology Incorporated (ADTI) to conduct and supervise the drilling operations of the West Cameron 424 Well No. 1 (the “Well”). Exploratory drilling activities were started from the Well’s surface location using the jack-up drilling rig *Florida*, owned and operated by Pride. The Rig was moved onto the well location, jacked-up on location, and the well was spudded at 0200 hours on 5 April 2004.

### **Brief Description, Fatality on Rig**

On 6 April, drilling operations were continuing on the Well, and conductor casing had been set and cemented. While waiting on cement, the rig crew nipped down the diverter, cut the pipe, and welded on the casing head. The crew rigged down the surface lines and rigged up the chain, swivel, shackle, and hoist, preparing to reconnect the diverter.

At approximately 0245 hours, 7 April 2004, as personnel were being hoisted via a work basket from the texas deck to a point just below the drill floor to commence the installation of the flow line to the diverter system, a loud noise was heard from the drill floor. Hoisting operations immediately ceased, and the hoist operator found the Assistant Driller (AD) lying on the drill floor with severe injuries. The AD was carried to the Rig medic’s treatment room, where he was pronounced dead by paramedics at 0446 hours.

## **Findings**

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### **Preliminary Activities — Well Plan**

The WC 424 Well No. 1 location sits in 95 feet of water. In early April 2004, the Operator's Permit to Drill was approved by MMS, and the Contractor's Rig was towed and positioned over the proposed well location.

### **The Crew Change — Prior to Accident**

On 6 April, crew "A" was conducting operations on the Rig. Crew "A" was scheduled to be relieved by crew "B" on the morning of 6 April 2004. Since the crew change had been planned at 0500 hours from the shore base installation in Cameron, Louisiana, using transportation by boat, most individuals of crew "B" began arriving at the shore base several hours early. Most had traveled during the night from their homes around the Louisiana Gulf Coast Area or Mississippi Gulf Coast.

Three individuals, including the AD, had traveled from their homes in Texas throughout the prior evening and early morning hours on April 5 and April 6. This trip from Texas to the Cameron shore base would normally take about 9-1/2 hours. Testimony indicated that the AD and others in his party arrived at Cameron at about 0330 hours on April 6.

The crew boat left the dock at 0500 hours. The boat trip was aborted after about one hour because of rough seas. The boat returned crew "B" to the dock, and the crew were then transported to the Petroleum Helicopters, Inc. airfield to await available flights to the Rig. Because of flight scheduling by Petroleum Helicopters, Inc., the Contractor's crew "B" stood-by at the heliport until three flights were available to transport crew "B" to the Rig. The AD was reportedly on the last flight, arriving at the Rig at approximately 1530 hrs.

At 0245 hrs, the time of the accident, the AD was nearing the end of his shift (0600 hrs), some 33 hours after departing his home for the drive to the base to begin his tour of duty.

## **Drilling Activities — Spud to Time of Fatality**

(From drilling morning reports, interviews, and written statements)

**02 April – 04 April** – The Permit to Drill was approved and the Rig was towed to location to begin the drilling of the WC 424 No. 1 well. The Rig was jacked up on location, and crew “A” welded and set 30 inch by 1 inch drive pipe.

**05 April** –

*0600 hrs* - Rig crew “A” nipped up the diverter and bell nipple. They then picked up the bottomhole assembly and washed and reamed to 397 feet. The well was spudded and drilled to the conductor casing point. The crew circulated and conditioned the hole to run conductor casing.

*1800 hrs* – According to testimony, the AD, the night tool pusher, and the welder departed home in Texas to travel to the shore base at Cameron, Louisiana.

**06 April** –

*0330 hrs* – According to testimony, AD, along with the night tool pusher and welder, arrived at the shore base.

*0500 hrs* – The boat transporting crew “B” departed the shore base bound for the Rig. According to testimony, the crew boat trip was aborted because of rough seas. Crew “B” then awaited the availability of helicopters to transport them to the Rig.

*0600 hrs* – The day shift, crew “A,” was on duty. This crew ran and set conductor casing. For this operation, the port side hoist had the casing tongs hanging during the running of casing, with the hoist assembly removed.

*1030 hrs* - Day shift, crew “B,” (first flight) arrived on the Rig. Day shift, crew “B,” commenced relieving crew “A” while cementing operations continued.

**1530 hrs** – Third and last flight transporting crew “B” arrived at the Rig with the AD on board.

**1700 hrs** – The day shift, crew “B,” rigged down surface lines. From testimony, the hoist assembly was installed by the day shift, crew “B,” prior to the start of duty of the night shift, crew “B.” The hoist system included the *Ingersoll-Rand Model HUL-40* hoist, the *Kennedy Wire Rope and Sling Company* hoist chain assembly with weighted swivel, and a 7/8-inch *Crosby* shackle (*see Attachment 2*).

**1800 hrs** – The day shift, crew “B,” nipped down the diverter and made pipe cuts. The AD was on duty because he was working a “split shift,” from 1800 hrs to 0600 hrs.

**2400 hrs** – The night shift relieved the day shift, and began installing the 20 inch by 20 3/4-inch 3M wellhead.

**07 April –**

**0130 hrs** – While waiting on cement, the night shift prepared to rig up the diverter system and continued work preparing the blowout preventer (BOP) stack for future use. A decision was made at a JSA meeting to lift personnel into position to install the diverter, using the rig floor hoist system with lift lines run through the rotary. The night shift removed the master bushings in the rotary and installed a Contractor-manufactured rotary barricade (*see Attachment 3*) around the opening in the rotary floor.

**Pre-0245 hrs** – Night shift, crew “B,” was still on duty. The task for the night shift was to install and weld the diverter flowline to the diverter bell nipple, which is located 6-1/2 feet below the rotary. To accomplish this, personnel and equipment had to be lifted over 30 feet from the texas deck to the elevation to make the weld. The port air hoist system was attached to the personnel work basket while the starboard air hoist system was rigged to the diverter flow line (*see Attachments 4 and 5 for the locations of all responsible individuals on the drill floor and texas deck, per testimony from the rig crew*).

## **Personnel Locations at Time of Accident**

*0245 hrs* – According to testimony, the night tool pusher assigned himself the duty of being the flag man on the main deck, providing line-of-sight between the man-riding work basket beneath the drill floor and the hoist operator located on the drill floor (*see Attachment 6*). The AD was “spotting” above the rotary on the drill floor with the derrick man operating the port side hoist controls, also on the drill floor. The port side hoist was connected through the rotary to the hoist basket on the texas deck.

The driller was on the texas deck, supervising the preparation to hoist the man-riding basket. He was simultaneously monitoring the preparatory work on the BOP’s, and supervising rigging up the diverter system flow line for hoisting. Two floor men were initially working on the BOP stack (one later accompanied the welder in the work basket), and the welder was preparing the equipment needed to install the diverter.

Multiple tasks were being performed at this time. In addition to the work of rigging up the hoist to the work basket to lift a welder above the texas deck, the diverter flowline was being rigged up to be hoisted into position, and the BOP stack was being prepared for future use. One floor man was working on the BOP’s and one was helping the welder, and two were preparing the flowline hoist. The driller was on the texas deck, monitoring all three operations, including the rig-up of the diverter flow line to the second hoist line, the starboard hoist. At this time, three men were working on the texas deck while concurrent overhead activities were underway. From testimony, they were to halt their work when welding started.

The night shift consisted of five (5) additional people (excluding the cook and helper) but they were not assigned duties directly related to the hoisting activities at the drill floor. Testimony indicates that at this time the crane operator and three roustabouts were off-loading casing from a work boat onto the Rig. The motor man was in the engine room transferring fuel.

At 0245, from testimony, the derrick man heard a loud noise and hoisting operations were halted. The derrick man then observed the AD lying on his back on the drill floor with his head in the direction of the draw-works and his feet adjacent to the rotary. The derrickman then noticed the rotary barrier had been moved and was now cocked and wedged in the rotary instead of sitting upright, squarely surrounding the opening.

## **Post-Accident Medical Procedures**

The following post-accident sequence of events was provided to the members of the MMS panel in written statements from the medic and from the Operator's contract representative (ADTI) on the Rig.

Immediately following the incident, the medic was summoned to the drill floor. The medic reported that the AD was semi-conscious with profuse bleeding from a large gash at the base and back of the skull. The medic also reported that the AD had an injury over the upper right chest area.

The AD was placed on high-flow oxygen and carried to the Rig medic's treatment room. Emergency medi-vac service was requested. By 0335 hours, the medic could not feel the AD's carotid pulse, and chest compressions were started. At 0440 hours, the medi-vac flight arrived at the Rig. The AD was pronounced dead by flight medics at 0446 hours. Governmental agencies were notified, and the medi-vac paramedics received word to transport the AD to the Port Arthur Coroner's office. The flight left for the Coroner's office at 0617 hours.

## **Installation of Shackle**

Since all of the members of the night shift, crew "B," were performing various tasks away from the drill floor, no one reported witnessing the incident. However, Contractor and MMS joint investigative teams were able to re-create events that led to the accident. The Contractor investigators hypothesized that the shackle in the lifting assembly had snagged the bottom part of the barricade guard. This hypothesis was based upon physical evidence collected at the site, the hoist line configuration when operations ceased, and the location of the shackle/swivel assembly, which would initially have been below the rotary table when the hoisting line was allowed the necessary slack-off to tie onto the basket located on the Texas deck.

The Contractor's investigators stated that the shackle securing the hoist chain assembly to the hoist line thimble eye was "inverted" from what would have been the preferred configuration if a



shackle was to be used in this particular, single-point loading type of operation. It was speculated that this configuration allowed the shackle pin to snare the rotary barricade either during the lift of the basket carrying the two employees, or immediately prior to the lift when the basket was moved from the work deck to the texas deck.

Attempts were made by Contractor personnel, witnessed by MMS inspectors, to re-create the lift operation to confirm the shackle, as installed, could have snagged the barrier. After two simulations with the assumed conditions, it was observed that the shackle did hang up on the hand rail of the rotary barricade as the swivel/shackle was hoisted through the rotary. During the simulation, the barrier remained caught by the shackle and was freely raised from the rig floor (*see Attachments 7, 8, and 9*).

Individuals within the work basket being raised by the lift have reported that they were within five (5) feet of the flow line position on the bell nipple when the lift stopped. From the length of the hoist chain assembly and the four-part sling, together with the vertical distance moved by the work basket at the moment of the ‘noise’ reported by the hoist operator, the shackle should have been between 45 and 55 feet above the rotary when the loud noise was heard. The snagged barricade could have been lifted this distance off the rig floor before falling.

The Contractor’s investigators testified that, from the position of the barricade, it is likely that it was lifted and then dislodged, falling and striking the AD. Other post-incident visual evidence was noted by the inspectors. The rotary barricade was found severely deformed with structural failure at welds and it would no longer fit into the rotary table because of distortion. Human tissue and hair resembling that of the AD were collected on the bottom cage of the barricade.

The driller testified that, from his position on the texas deck, he noticed the barricade hanging “in the air” during the hoisting operation just prior to the accident as he looked up through the rotary to flag the AD to slack off the starboard hoist lines. He testified that he remembered wondering why someone decided to tie off the barricade and move it with the hoist line. He also testified that he could not see the AD at this time and believed the AD had momentarily abandoned his post to operate the starboard hoist controls to provide slack, as signaled by the driller.

## **Use of a Shackle in the Lift Assembly**

Interviews were conducted with an expert from Crane Tech in the use of rigging gear, sling inspections, and weight handling, including the use of shackles. Pictures of the rig-up of the assembly as it was used during the incident were examined and the best practices for a single-point lift were discussed. Testimony was received that the shackle, as employed, was not shimmed. In the configuration used, the load could pull the shackle to one side, exposing a large section of the pin and the shoulder of the shackle, as happened during the incident reenactment. The un-shimmed configuration employed in the lift assembly could also allow the load to place more force upon the sides of the shackle.

Expert testimony was received that, during a single-point loading lift, as in this case, if a shackle is used it would be preferable to install the shackle by placing the shackle bow in the hook. It was stated that placing the bow, rather than the pin of the shackle, in the hook would allow the load to center automatically in the 90-degree plane of the hook and the shackle, the strongest plane. It was stated that, even in the preferred configuration, the load on the pin should still be carefully centered with shims.

The catalogs of the manufacturer of the shackle were consulted for the manufacturer's recommendations on the use of shackles in a lift assembly. The catalogs recommend that any load on the pin of a shackle be "reasonably centered with shims." A pad eye width of a minimum of 80 percent of the shackle spread is recommended as best practice.

From examination of the shackle and pad eye of the assembly used during the accident, the pad eye was considerably less than 80 percent of the pin and was not shimmed (*see Attachment 10*).

## **Review of Pre-Job Safety Analysis – Safety Meeting**

A JSA was completed prior to the task. This meeting discussed the procedures to be followed during a "man-riding operation" and other potential hazards. However, from testimony of Rig personnel, the JSA report did not address coordination of simultaneous multiple tasks that were ongoing just before the incident. Nor did the JSA address specific job assignments, or hazards created from simultaneously conducting multiple tasks.

The copy of the JSA report given to the panel members was not signed. Testimony indicated the meeting itself was conducted with some of the shift absent. Several night shift crew individuals testified that they had some personal doubts during the JSA meeting about the soundness of simultaneously undertaking multiple activities. But because of general managerial environment and experience, they did not comment and continued to perform their individual roles. Testimony indicated that the AD undertook the role of “spotter” on the Rig floor, and later undertook the simultaneous responsibility of operating the starboard side hoist either on his own recognizance or after being assigned personally by the tool pusher.

Testimony indicated that crew “B,” in similar prior circumstances, would perform pre-checks on the hoist assembly at the beginning of each hitch, and change-out the chain and swivel if necessary. The crew “B” night shift testified they usually changed out any shackle used in the hoist assembly, replacing it with a “cold shackle.” (In this case, a “cold shackle” refers to a non-load rated link used to connect the swivel and pad eye.) No pre-checks were conducted before these tasks were started, and the hoist assembly was not inspected nor was the shackle replaced. Photos taken at the Rig clearly show that the shackle securing the hoist chain assembly to the hoist line thimble was installed pin side up and was not “shimmed up” to center the load.

### **Review of Contractor’s Standards, Policies, and Administrative Controls**

The Contractor provided a copy of company safety policies, *Pride Offshore Personnel Safety Manual, SG-14, Man-Riding Tugger Winches*, of the *Corporate Safety Guidelines*, dated April 2002, which were in effect at the time of the incident.

A selection of articles from this manual are quoted:

General Requirements, Item #1, page 57: *“Conduct a toolbox meeting (JSA) prior to commencing man-riding operations; ensure all personnel are aware of their duties and signals to be used.”*

Secondary Communication, page 58: *“No persons assigned a task involving man-riding operations will leave their post until the task is complete.”*

Under the section “Man-Riding Pre-Checks,” page 58, for “Hook assembly and secondary lock or pin of connection device:” *“checks will be made prior to commencement of a man-riding task...”*

Also under “Man-Riding Pre-Checks, Lifting or Ascending of Personnel,” page 58: *“Lifting of personnel shall only be performed using equipment that complies with the company QA/HSE standards.”*

Also under “Man-Riding Pre-Checks, Lifting or Ascending of Personnel,” page 59: *“When a person is being lifted, all activity in the area must cease.”*

Following the accident, the Contractor revised the manual to incorporate lessons learned from the accident. The *Pride Offshore Personnel Safety Manual, SG-14, and Revised April 2004*, incorporated changes to the section *Man-Riding Tugger Winches* as follows:

On Page 4 of 5:

Connection of the cable thimble and chain lock-a-loy should be made directly to the swivel.”  
*“No shackles are allowed as connecting devices on either end of the swivel.”*

*“Only certified man-riding baskets shall be used. This applies to operations conducted both above and below the rotary and during any other task performed on the facility or rig. A certificate of certification for the man-riding basket shall be kept on file and an annual third party inspection shall be performed...”*

*“If using the rig floor hoist for below the rotary operations, a man-rider lookout must be stationed at the rotary during the entire operation with no other task assigned to the lookout person.”*

### **Personnel Management on the Rig**

Testimony indicates that crew “B” had been reorganized a few weeks before the incident with a driller from another rig taking over the supervision of the night shift. Testimony indicates that the chain-of-command and authority, usually from tool pusher, to the driller, to the shift

members, was not clear and some confusion existed among the shift as to who would be responsible for assignments of duties during operations. From testimony, the tool pusher frequently exercised direct and specific supervision of shift activities of individual shift members. Testimony was received that the AD frequently undertook tasks and responsibilities on his own recognizance with assent of the tool pusher.

The JSA was not fully attended and company and Rig management requirements were not clear on the obligation to attend. During the JSA meeting, testimony indicates responsibilities for various tasks to be accomplished during the upcoming operation were assumed by individuals without definitive designation, partly because of the authority confusion.

### **Federal Aviation Administration Studies on Fatigue**

At the most fundamental level, fatigue results in cognitive ‘disengagement’ or ‘withdrawal’ from the operating environment. According to studies performed by the Battelle Memorial Institute for the Office of the Chief Scientific and Technical Advisor for Human Factors with the Federal Aviation Administration (FAA), fatigued workers have difficulty coping when appreciating a complex situation while avoiding distractions, keeping track of the current situation and updating strategies, assessing risk and anticipating consequences, and controlling mood and avoiding inappropriate behavior.

Studies suggests that the ‘high risk times for fatigue’ are (a) midnight to 0600 hours, (b) first night shift after a break, and (c) first 2-3 hours of a shift or end of shift.

## **Conclusions**

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### **The Accident**

After a review of the information obtained during the investigation, it is concluded that, at approximately 0245 hours, while through-rotary man-riding hoisting operations were underway, the hand-rail on the rotary barricade became snagged with the shackle of the hoisting assembly and was lifted into the air. The incident was not noticed by the Assistant Driller (AD), who was working as the spotter for the hoisting operation. As the lift was nearing completion, the rotary barricade suddenly dislodged from the shackle and fell, striking the AD, who had moved to a point directly beneath the snagged barricade. This impact resulted in the death of the AD.

### **Cause of Fatality**

- 1) The barricade was snagged on the pin of the swivel-shackle connection and lifted from its location to a height of over 45 feet before dislodging and falling.
- 2) The AD was assigned to spot and watch the operation but failed to observe the snagging of the barricade and halt the operation.
- 3) After the barricade was lifted, the AD positioned himself directly beside the open rotary table hole beneath the lifted barricade. This position allowed the barricade to strike the AD when it was dislodged and fell.

### **Probable Causes**

1. It is probable that the method of employing the shackle in the hoist assembly directly contributed to the accident.

(a) The shackle was installed, pin facing up, with the load suspended from the bow of the shackle. Had the shackle been installed with the pin down, it is probable that the pin could not have caught the barricade securely enough to lift it.

(b) As installed, the shackle had no shims on the pin to center the load and hold it in place. Had shims been installed, it is probable that the load could not have pulled the pad eye connection to the side, exposing enough of the pin to snag the barricade securely enough to lift it.

2. A failure to follow *Corporate Safety Guidelines (CSG)* of the Contractor that were in effect at the time of the accident probably contributed to the accident.

(a) The *CSG* required the crew to perform pre-checks of the hook assembly and secondary lock or pin of connection devices prior to the commencement of a man-riding task. This was not done, and given that the crew had consistently changed out the use of a shackle in the past, had the inspection been completed it is probable that the shackle would have been replaced.

b) The *CSG* recommends that persons assigned to a task involving man/riding hoist operations will not leave their post until the task is complete. This recommendation was not followed, as the AD undertook the performance of other tasks on the rig floor, including operating the second air hoist, and left his post.

(c) The *CSG* recommends that during man/riding operations no other task be performed in the general area. This recommendation was not followed, as rig-up for the hoist of the diverter and work on the BOP's continued during the man-riding operation.

## Possible Contributing Causes

It is possible that other factors contributed to the accident.

### 1. Supervision –

(a) It is possible that an uncertain command structure introduced a lack of organization and work direction, contributing to the cause of the accident. A recent change in the chain-of-rig-command, and factors associated with that change, resulted in some uncertainty about authority and the assignments of responsibility during job operations. As a result, the night tool pusher, driller, and AD took on specific tasks without an overall supervisor assigning individual responsibilities and controlling the operation.

(b) This uncertainty in the chain-of-command possibly contributed to the failure to perform a thorough JSA, with designation of specific responsibilities. Such a meeting would usually include a review of the potential hazards and a review of *CSG* safety policies prior to commencing man-riding operations. This lack of allocation of roles possibly allowed the AD to assume the responsibility of multiple tasks, leading him to be distracted when the barrier was snagged.

(c) The uncertain chain of command possibly caused the continuation of multiple activities, in conflict with the *CSG*, during the man-riding operation.

**2. Fatigue** – Because of the difficulties associated with weather and the necessity of changing from boat to helicopter, crew “B” had experienced an unusually long time of travel to begin their work tour. Because of this lengthy travel time, the usual rest period prior to beginning shift work was attenuated, creating the conditions described by the FAA as most likely to be associated with fatigue. It is possible that the AD’s inattention to the missing barricade was associated with fatigue.

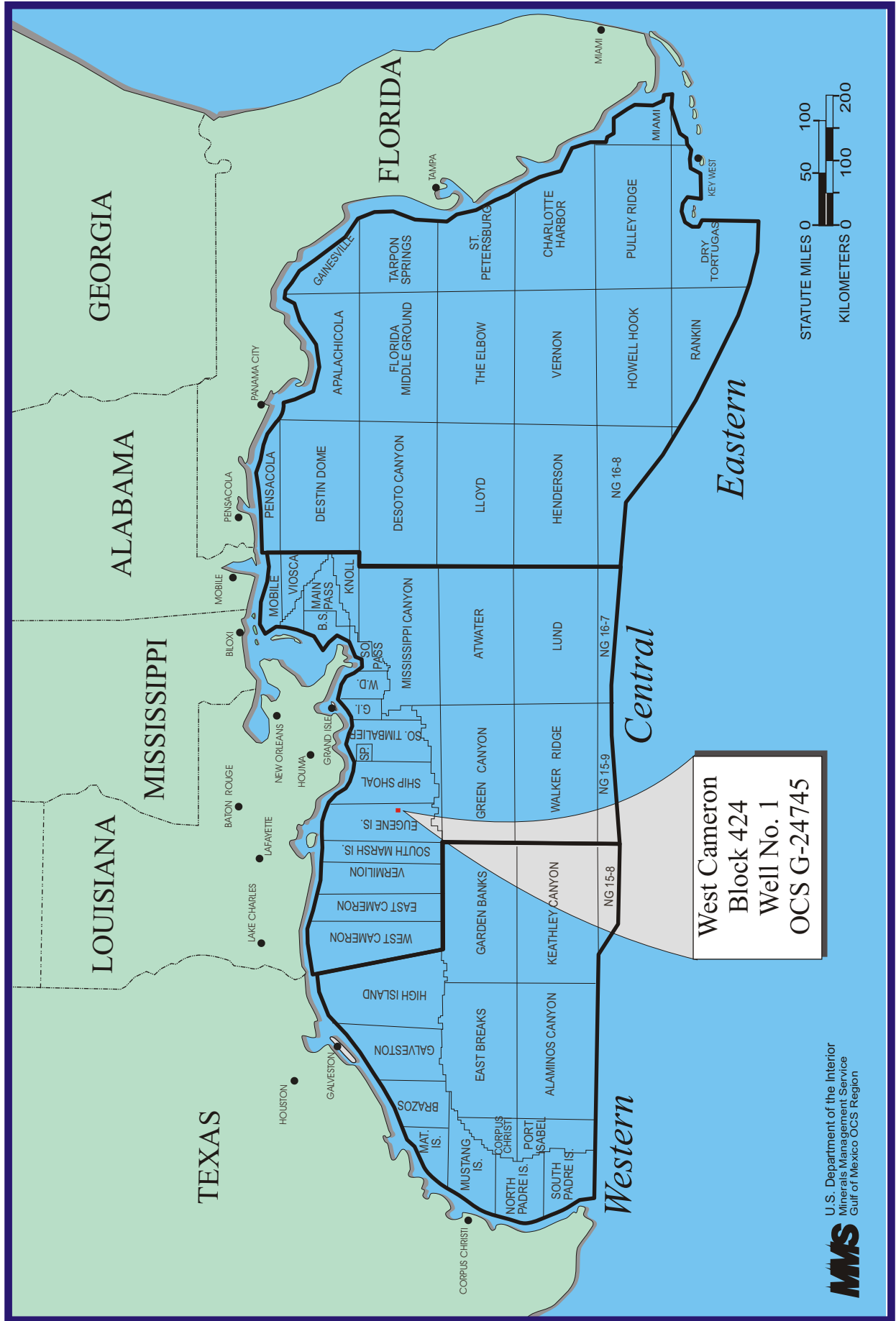


## **Recommendations**

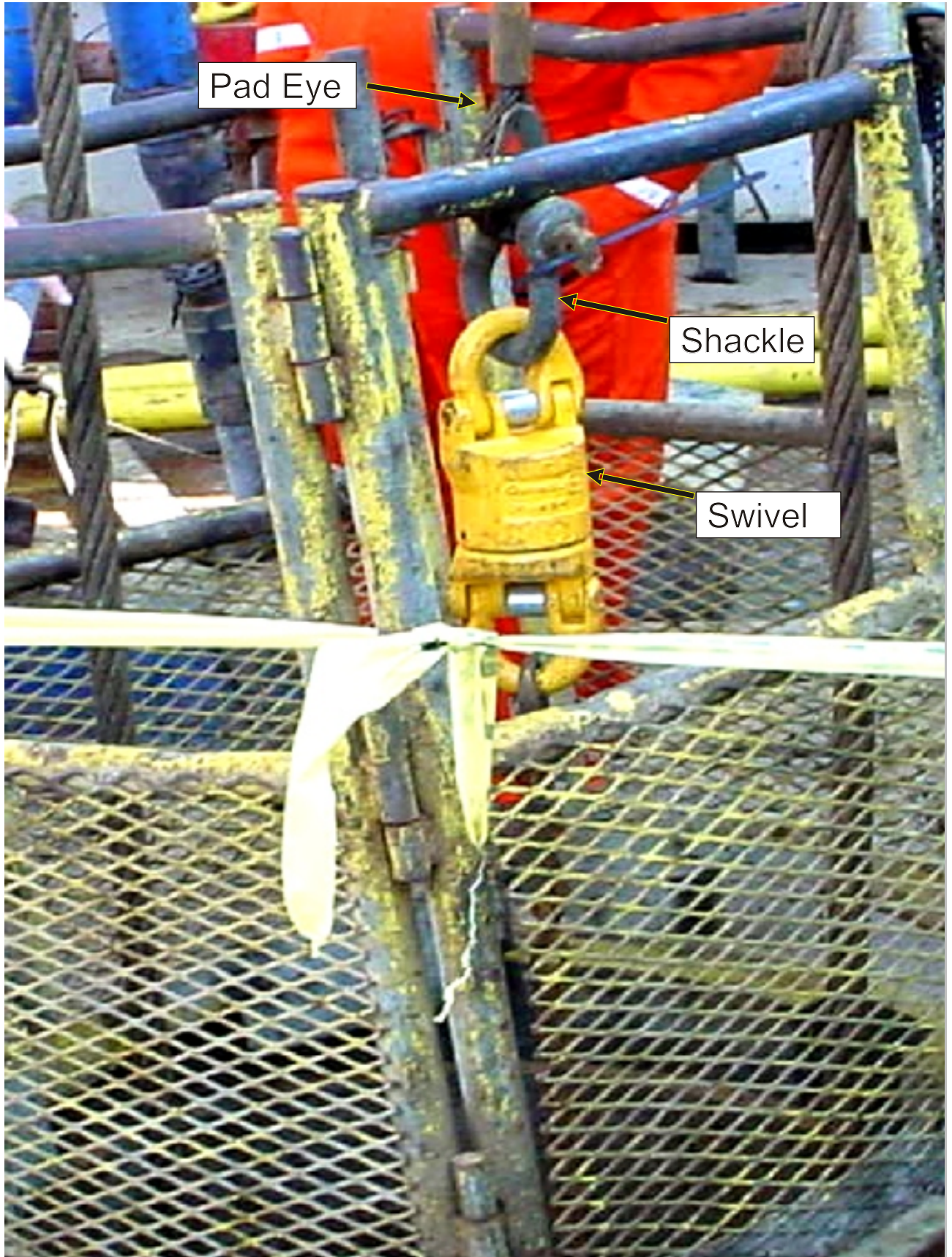
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It is recommended that MMS issue a Safety Alert warning about the dangers of using an unshimmed shackle in a lift in a configuration and circumstance that allows snagging on other equipment.

In addition, the Safety Alert should emphasize the need for a thorough JAS meeting, led by site managers, prior to man-hoisting operations, and should recommend a visual inspection of hoist and rigging equipment prior to a lift.



Location of Lease OCS-G 24745, West Cameron Block 424, Well No. 1.

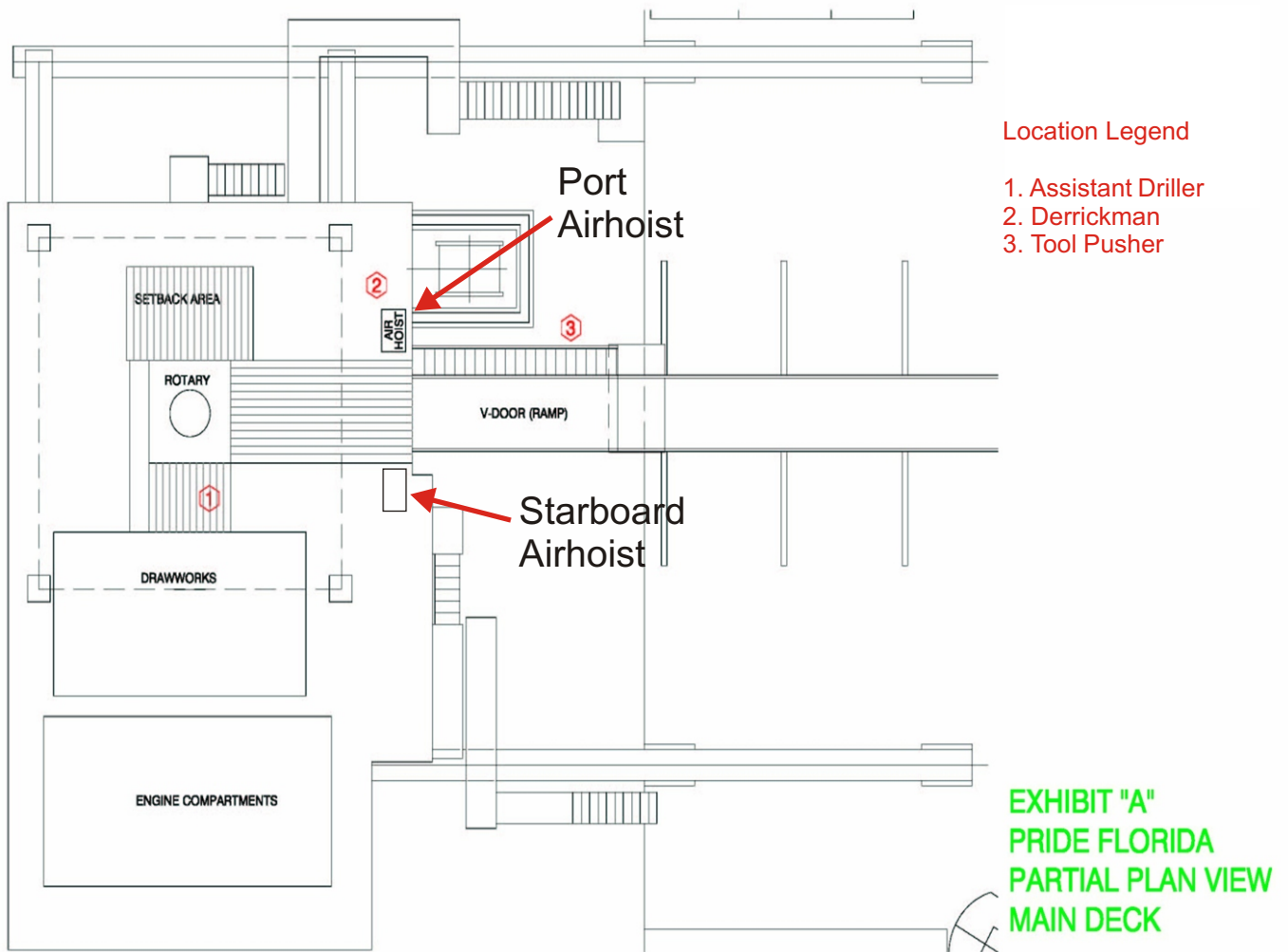


Hoist Assembly Including Shackle, Swivel, Pad Eye.

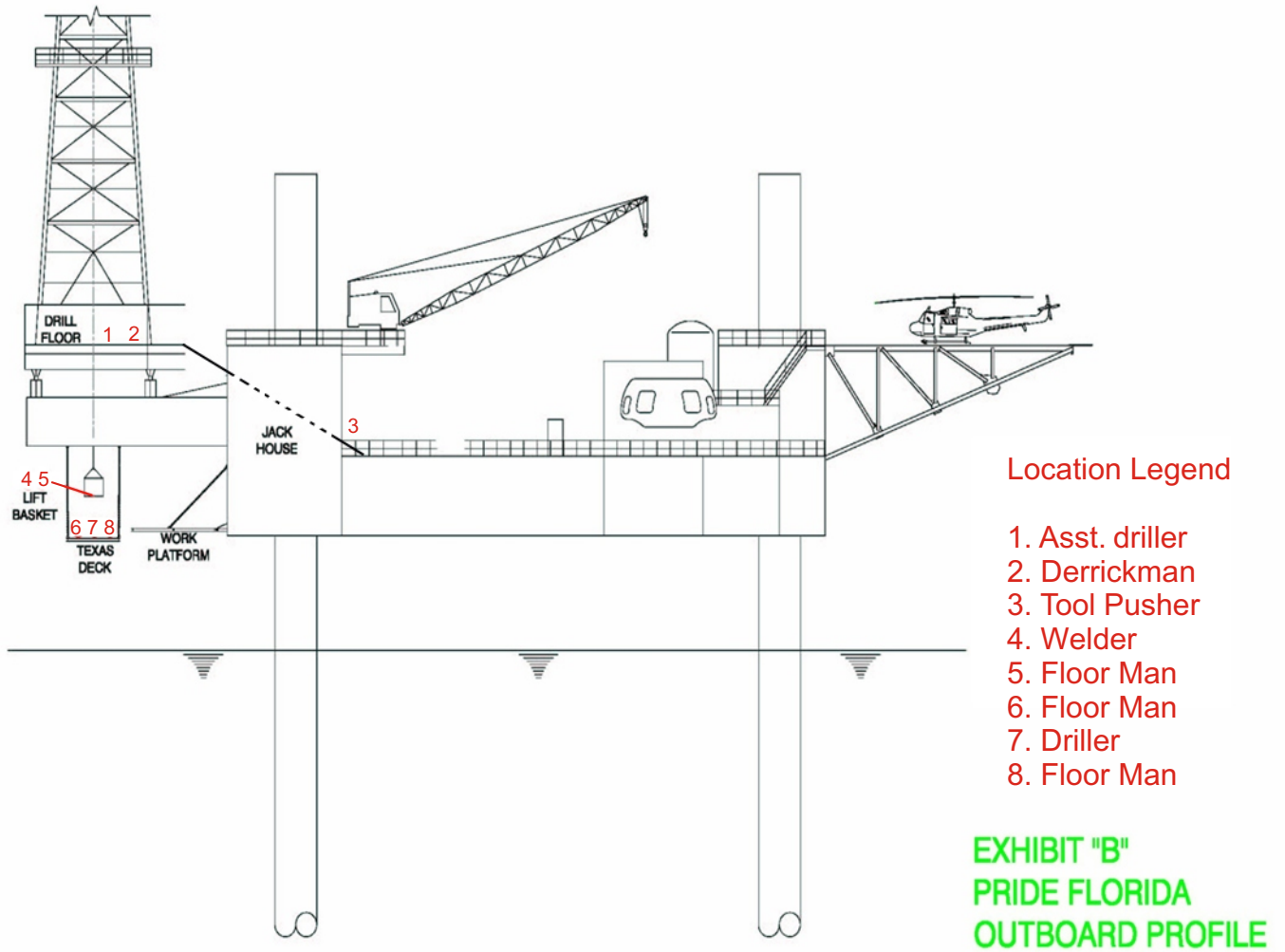




Contractor Manufactured Barricade.

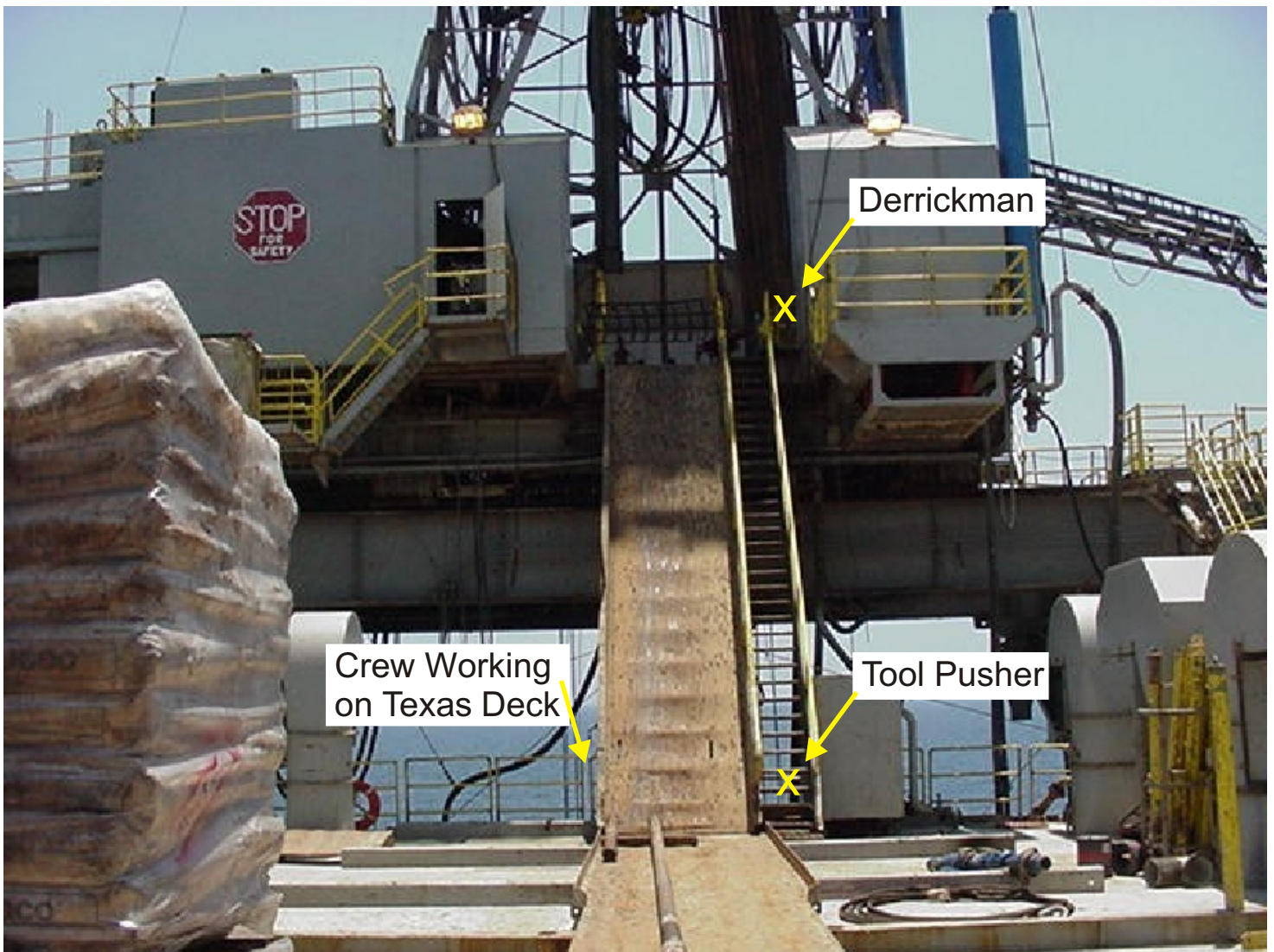


Location of Personnel on Rig Floor at Time of Accident.



Location of Personnel on Texas Deck at Time of Accident.





View of Texas Deck and Rig Floor from Position of the Tool Pusher.





Barricade and Lift Assembly, Start of Reenactment.





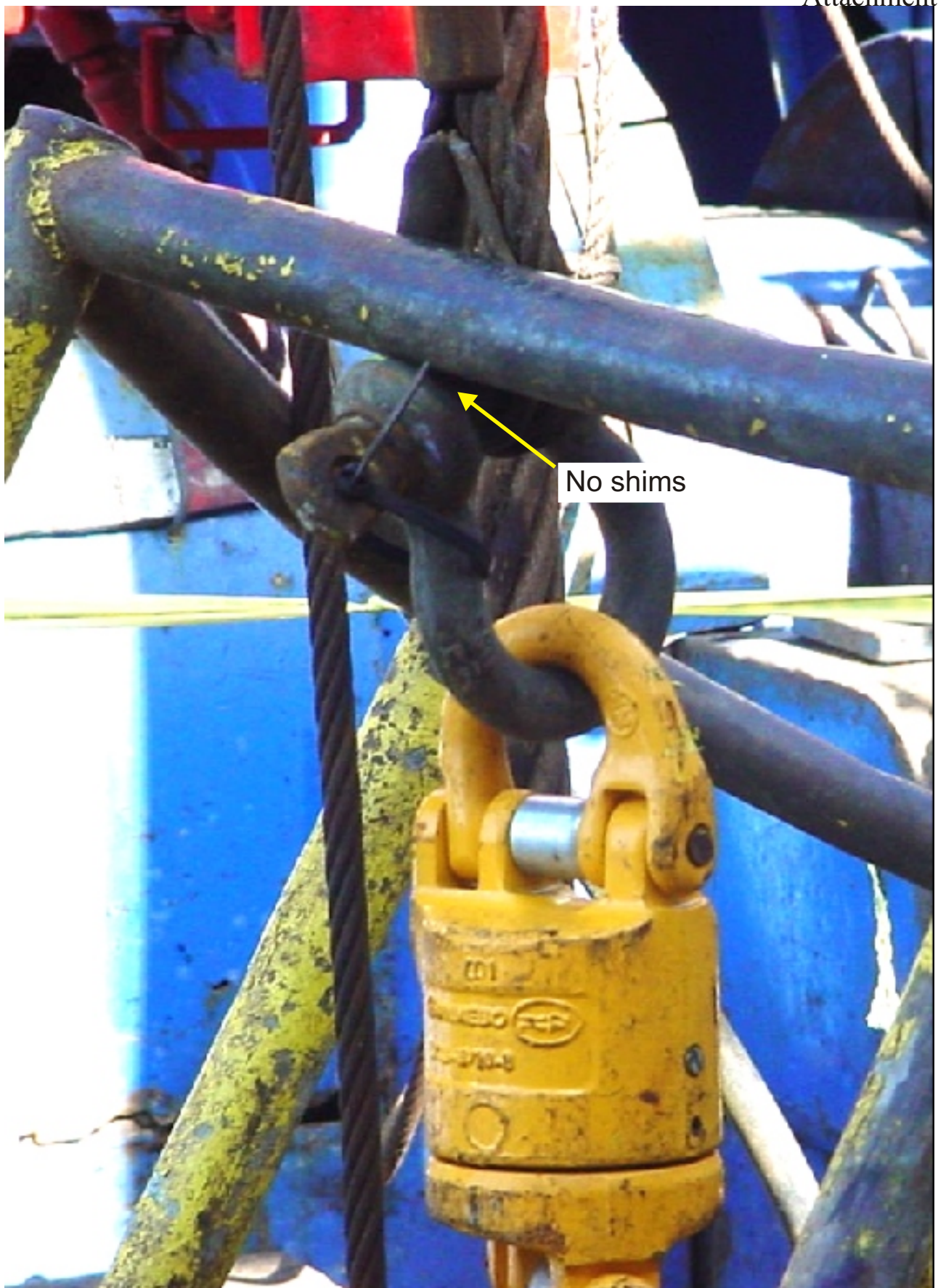
Barricade and Lift Assembly Snagged by Shackle During Hoist, Reenactment.





Barricade Lifted by Shackle, Reenactment.





Un-shimmed Shackle Assembly Snagged on Barricade, Reenactment.

# **MMS** *Securing Ocean Energy & Economic Value for America*



## **The Department of the Interior Mission**

As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering sound use of our land and water resources; protecting our fish, wildlife, and biological diversity; preserving the environmental and cultural values of our national parks and historical places; and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The Department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.



## **The Minerals Management Service Mission**

As a bureau of the Department of the Interior, the Minerals Management Service's (MMS) primary responsibilities are to manage the mineral resources located on the Nation's Outer Continental Shelf (OCS), collect revenue from the Federal OCS and onshore Federal and Indian lands, and distribute those revenues.

Moreover, in working to meet its responsibilities, the **Offshore Minerals Management Program** administers the OCS competitive leasing program and oversees the safe and environmentally sound exploration and production of our Nation's offshore natural gas, oil and other mineral resources. The MMS **Minerals Revenue Management** meets its responsibilities by ensuring the efficient, timely and accurate collection and disbursement of revenue from mineral leasing and production due to Indian tribes and allottees, States and the U.S. Treasury.

The MMS strives to fulfill its responsibilities through the general guiding principles of: (1) being responsive to the public's concerns and interests by maintaining a dialogue with all potentially affected parties and (2) carrying out its programs with an emphasis on working to enhance the quality of life for all Americans by lending MMS assistance and expertise to economic development and environmental protection.