

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF SAFETY AND ENVIRONMENTAL ENFORCEMENT
GULF OF MEXICO REGION

ACCIDENT INVESTIGATION REPORT

For Public Release

1. OCCURRED

DATE: 01-DEC-2015 TIME: 2200 HOURS

2. OPERATOR: Fieldwood SD Offshore LLC

REPRESENTATIVE:

TELEPHONE:

CONTRACTOR:

REPRESENTATIVE:

TELEPHONE:

3. OPERATOR/CONTRACTOR REPRESENTATIVE/SUPERVISOR
ON SITE AT TIME OF INCIDENT:

4. LEASE: G02647

AREA: EB LATITUDE:

BLOCK: 160 LONGITUDE:

5. PLATFORM: A-Cerveza

RIG NAME:

6. ACTIVITY: EXPLORATION(POE)
 DEVELOPMENT/PRODUCTION
(DOCD/POD)

7. TYPE:

- HISTORIC INJURY
- REQUIRED EVACUATION
 - LTA (1-3 days)
 - LTA (>3 days)
 - RW/JT (1-3 days)
 - RW/JT (>3 days)
 - Other Injury

- FATALITY
- POLLUTION
- FIRE
- EXPLOSION

- LWC HISTORIC BLOWOUT
- UNDERGROUND
 - SURFACE
 - DEVERTER
 - SURFACE EQUIPMENT FAILURE OR PROCEDURES

COLLISION HISTORIC >\$25K <=\$25K

- STRUCTURAL DAMAGE
- CRANE
- OTHER LIFTING DEVICE
- DAMAGED/DISABLED SAFETY SYS.
- INCIDENT >\$25K \$160,000.00
- H2S/15MIN./20PPM
- REQUIRED MUSTER
- SHUTDOWN FROM GAS RELEASE
- OTHER

6. OPERATION:

- PRODUCTION
- DRILLING
- WORKOVER
- COMPLETION
- HELICOPTER
- MOTOR VESSEL
- PIPELINE SEGMENT NO.
- OTHER Decom. Plug and Abandon

8. CAUSE:

- EQUIPMENT FAILURE
- HUMAN ERROR
- EXTERNAL DAMAGE
- SLIP/TRIP/FALL
- WEATHER RELATED
- LEAK
- UPSET H2O TREATING
- OVERBOARD DRILLING FLUID
- OTHER _____

9. WATER DEPTH: 935 FT.

10. DISTANCE FROM SHORE: 87 MI.

11. WIND DIRECTION: NE
SPEED: 15 M.P.H.

12. CURRENT DIRECTION: E
SPEED: 2 M.P.H.

13. SEA STATE: 3 FT.

On 01 December 2015, Fieldwood Energy notified the Lake Jackson District a crane incident had occurred at East Breaks 160 A, OCSG-2647, Complex ID 10178. The incident occurred during rigless Plug and Abandonment (P&A) operation using a hydraulic jack system and the platform crane. The P&A Supervisor and the crew were subsequently interviewed, and statements were taken by BSEE.

At approximately 2230 hours operations were being conducted using the platform crane to pull 1,620 feet of 3 1/2 inch drill pipe/ work string weighing about 22,500 pounds. The lessee had previously dynamically tested the crane to approximately 35,000 pounds. The lessee also established a "safe" working limit of 30,000 pounds. The crane was connected to the work string by elevators positioned below the top tool joint of the string.

While lifting the work string with the crane, it became lodged in the well casing. The Crane Operator attempted to free the string from its bind by pulling up to 30,000 pounds, 7,500 pounds over the free weight of the work string. The crew was unable to free the stuck work string by pulling with the crane. The crew then set the slips, and the crane cable with rigging was slacked off by 4 to 5 feet, leaving the crane hoist system and rigging attached to the work string with no load on the crane.

The crew then began to use the hydraulic jack system in attempt to pull the work string. Up to 100,000 pounds of pulling force was applied to pull and lay down the first two joints of work string. The next joint of work string was slowly pulled approximately 30 feet out of the hole with extensive drag, but not high enough to set the bottom slips and break out the joint. The work string became stuck within the well casing with the bottom hole assembly at approximately 1,548 feet. The crew applied a pulling force of 275,000 pounds in an attempt to free the work string, at this moment the work string suddenly released from the down-hole bind.

The abrupt release of the bind caused the work string to transverse upward approximately 4 to 6 feet and then immediately fell downward. The sudden release of energy upward threw the hydraulic jack system's traveling slips out of the upper casing bowl. The top joint of the work string had not been pulled out of the hole far enough to set the bottom slips and break the joint connection. Therefore, when the top traveling slips were thrown out of the bowl by the pipe rebound, no slips remained in position to support the weight of the work string.

When the work string subsequently fell back downward into the hole, its full weight with force was suddenly applied to the crane's hoist system and boom due to the still attached elevators. The force of the falling work string then shock loaded the crane causing the crane boom to catastrophically buckle and collapse on the work basket of the hydraulic jack system. The crane boom then folded in half sending the jib end of the boom toward the Crane Operator's cab. The jib end of the boom was narrowly suspended approximately 15 feet above the manned Crane Operator's cab resting on a single boom stop.

There were no reported injuries, fire, or environmental pollution caused by the incident. Damage was estimated to more than \$160,000.

18. LIST THE PROBABLE CAUSE(S) OF ACCIDENT:

1. The work string, consisting of a 9 5/8 inch rock bit, a 9 5/8 inch casing scrapper, and 1,620 feet of 3 1/2 inch drill pipe weighing approximately 22,500 pounds was lodged in the 9 5/8 inch internal diameter well casing. The Crane Operator had pulled up to 30,000 pounds (25 percent over the estimated weight of work string) when the decision was made to utilize the hydraulic jack system.

2. The amount of upward force (275,000 pounds) applied by the hydraulic jack system suddenly freed the lodged work string causing the string to rebound out of the hole approximately 6 feet. The rebound threw the traveling slips out of their position, eliminating support of the work string's weight. When the work string fell back down into the hole, the force of the work string transferred to the still attached crane hoist system causing the crane to be shock loaded.

3. Due to the P&A crew leaving the crane attached to the work string, conditions which caused the crane to be shock loaded were created. The shock load caused the crane's boom to collapse on top of the hydraulic jack system work basket, then folding the boom in half sending the jib end toward the Crane Operator's cab. This directly led to the failure and collapse of the crane boom and other components.

4. Lessee failed to ensure control of the work string would be maintained if the stored energy was released while utilizing the hydraulic jack system.

19. LIST THE CONTRIBUTING CAUSE(S) OF ACCIDENT:

Poor planning and risk evaluation by the operator.

20. LIST THE ADDITIONAL INFORMATION:

21. PROPERTY DAMAGED:

Severe damage to the platform's crane including 110 foot boom, jib, both load and auxiliary wire ropes, load block, pendant lines, and load indicator system. Damage to hydraulic jack system was minor.

NATURE OF DAMAGE:

All damaged property require repairs or replacement.

ESTIMATED AMOUNT (TOTAL): \$160,000

22. RECOMMENDATIONS TO PREVENT RECURRENCE NARRATIVE:

BSEE should consider issuing a safety alert concerning the hazard created with sudden release of stored energy when utilizing hydraulic jack systems and a crane when removing tubing from a wellbore.

23. POSSIBLE OCS VIOLATIONS RELATED TO ACCIDENT: YES

24. SPECIFY VIOLATIONS DIRECTLY OR INDIRECTLY CONTRIBUTING. NARRATIVE:

G-110(S) Shock loading crane and collapsing boom.

Platform ESD not immediately activated.
G-110(C) Failed to mitigate release of stored energy.
I-102(C) Failed to ensure load is free to be lifted.

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Note: See Attachments for Incident(s) of Noncompliance and photos.

25. DATE OF ONSITE INVESTIGATION:

02-DEC-2015

26. ONSITE TEAM MEMBERS:

**Daniel Gonzalez #270 / Edward
Keown #262 /**

29. ACCIDENT INVESTIGATION

PANEL FORMED: **NO**

OCS REPORT:

30. DISTRICT SUPERVISOR:

John McCarroll

APPROVED

DATE: **11-MAY-2016**

Crane/Other Material-Handling Equipment Attachment

Equipment Information

Installation date: **01-JAN-81**

Manufacturer: **SEA KING**

Manufacture date: **06-OCT-80**

Make/Model: **SEA KING / SK-1700**

Any modifications since manufactured? Describe and include date(s).

What was the maximum lifting capacity at the time of the lift?

Static: Dynamic: **34775**

Was a tag line utilized during the lift? **N**

Were there any known documented deficiencies prior to conducting the lift? If yes, what were the deficiencies?

Crane was shock loaded.

List specific type of failure that occurred during this incident.(e.g. cable parted, sticking control valve, etc.)

Boom collapse

If sling/loose gear failure occurred does operator have a sling/loose gear inspection program in place? **Y**

Type of lift: **DD**

For crane only:

Type of crane: **HYDRAULIC**

Boom angle at time of incident: Degrees: **30** Radius: **28**

What was load limit at that angle? **34775**

Crane equipped with: **B**

Which line was in use at time of incident? **L**

If load line involved, what configuration is the load block: **4** part.

Load Information

What was being lifted? **WORK STRING**

Description of what was being lifted (e.g. 10 joints of 2 3/8-inch pipe, ten 500-lb. sacks of sand, 2 employees, etc.)

1620 feet work string including pup, sub bit, casing scrapper, rock bit

Approximate weight of load being lifted: **22500**

Was crane/lifting device equipped with an operable weight indicator? **Y**

Was the load identified with the correct or approximate weight? **N**

Where was the lift started, where was it destined to finish, and at what point in the lift did the incident occur? Give specific details (e.g. pipe rack, riser cart, drill floor, etc.)

Lifting work string from well bore

If personnel was being lifted at the time of this incident, give specific details of lifting device and riding apparatus in use (e.g. 1) crane-personnel basket, 2) air hoist-boatswain chair, other)

n/a

Were personnel wearing a safety harness? **NA**

Was a lifeline available and utilized? **NA**

List property lost overboard.

Rigger/Operator Information

Has rigger had rigger training? **Y**

If yes, date of last training: **01-JUN-15**

How many years of rigger experience did rigger have? **6**

How many hours was the operator on duty prior to the incident? **16**

Was operator on medication when incident occurred? **N**

How many hours was the rigger on duty prior to the incident? **4**

How much sleep did rigger have in the 24 hours preceding this incident? **8**

Was rigger on medication when incident occurred? **N**

Were all personnel involved in the lift drug tested immediately following this incident?

Operator: **N** Rigger: **N** Other:

While conducting the lift, was line of sight between operator and load maintained?

Y

Does operator wear glasses or contact lenses? **N**

If so, were glasses or contacts in use at time of the incident? **N**

Does operator wear a hearing aid? **N**

If so, was operator using hearing aid at time of the incident? **N**

What type of communication system was being utilized between operator and rigger at time of this incident?

Radio and hand signals

For crane only:

What crane training institution did crane operator attend?

SPARROWS

Where was institution located? **LAFAYETTE**

Was operator qualified on this type of crane? **Y**

How much actual operational time did operator have on this particular crane involved in this incident?

Years: **20** Months: **1**

List recent crane operator training dates.

08-MAY-2015

For other material-handling equipment only:

Has operator been trained to operate the lifting device involved in the incident? **N**

How many years of experience did operator have operating the specific type of

Inspection/Maintenance Information

For crane only:

Is the crane involved classified as Heavy, Moderate or Infrequent use.

H

Was pre-use inspection conducted? **Y**

For the annual/quarterly/monthly crane inspections, please fill out the following information:

What was the date of the last inspection? **09-NOV-15**

Who performed the last inspection?

Was inspection conducted in-house or by a 3rd party? **IH**

Who qualified the inspector? **GULF CRANE**

Does operators' policy require load or pull test prior to heavy lift? **Y**

Which type of test was conducted prior to heavy lift? **P**

Date of last pull test: **09-NOV-15** Load test: **09-NOV-15**

Results: **P**

If fail explain why:

pulled to 28,255 lbs

Test Parameters: Boom angle: **40** Radius: **45**

What was the date of most recent crane maintenance performed? **01-DEC-15**

Who performed crane maintenance? (Please clarify persons name or company name.)

GULF CRANE

Was crane maintenance performed in-house or by a third party? **TP**

What type of maintenance was performed?

Changed out hydraulic pump

For other material-handling equipment only:

Was equipment visually inspected before the lift took place?

What is the manufacture's recommendation for performing periodic inspection on the equipment involved in this incident?

Safety Management Systems

Does the company have a safety management program in place? **N**

Does the company's safety management program address crane/other material-handling equipment operations?

N

Provide any remarks you may have that applies to the company's safety management program and this incident?

Did operator fill out a Job Safety Analysis (JSA) prior to job being performed?

Y

Did operator have an operational or safety meeting prior to job being performed?

Y

What precautions were taken by operator before conducting lift resulting in ir

Procedures in place for crane/other material-handling equipment activities:

Did operator have procedures written? **Y**

Did procedures cover the circumstances of this incident? **Y**

Was a copy available for review prior to incident? **Y**

Were procedures available to MMS upon request? **Y**

Is it documented that operator's representative reviewed procedures before conducting lift?

Y

Additional observations or concerns: