

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: 28-APR-2017 TIME: 1651 HOURS

2. OPERATOR: Arena Offshore, LP

REPRESENTATIVE:

TELEPHONE:

CONTRACTOR:

REPRESENTATIVE:

TELEPHONE:

- STRUCTURAL DAMAGE
- CRANE
- OTHER LIFTING DEVICE
- DAMAGED/DISABLED SAFETY SYS.
- INCIDENT >\$25K \$32989
- H2S/15MIN./20PPM
- REQUIRED MUSTER
- SHUTDOWN FROM GAS RELEASE
- OTHER

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

6. OPERATION:

4. LEASE: G02118

AREA: EI LATITUDE:

BLOCK: 338 LONGITUDE:

- PRODUCTION
- DRILLING
- WORKOVER
- COMPLETION
- HELICOPTER
- MOTOR VESSEL
- PIPELINE SEGMENT NO.
- OTHER

5. PLATFORM: K

RIG NAME:

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

8. CAUSE:

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

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

9. WATER DEPTH: 270 FT.

10. DISTANCE FROM SHORE: 67 MI.

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

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

13. SEA STATE: FT.

14. PICTURES TAKEN:

15. STATEMENT TAKEN:

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

On April 28, 2017 at approximately 1651 hours, the boom heel section of the Titan 5400 crane was found damaged.

Prior to the incident, the Crane Operator (CO) was attempting to utilize the Titan 5400 crane to transfer a basket of compressor maintenance equipment from the drilling deck to the production deck. A Job Safety Analysis (JSA) was completed for the lifts involved which specified "boom angles too high or too low". To eliminate this hazard, the JSA stated "check and make sure boom angle is not an issue before making lifts".

Once the initial lift was completed, the CO completed three additional lifts to unload the compressor equipment. The CO had the boom positioned at the maximum vertical angle and could not position the basket any closer without overriding the high angle boom winch kick out. The CO bypassed the kick out to complete the additional lifts. Once crane operations were completed, the crane boom was lowered in the boom rest with no notification of damage to the boom.

Prior to reusing the crane, employees noticed severe damage on the heel section of the boom. The damage associated with the heel section is comparable to damage due to the heel section coming in contact with the boom stop. This could have only occurred if the angle boom winch kick out was bypassed or if it failed to perform its designed function. Due to the timeline, this could have only occurred during the lifts performed while unloading the compressor equipment.

Once the damage was observed, employees raised the crane boom to take photos of boom heel for investigation purposes. Due to the severity of the damage, the crane should have remained out of service until a certified crane mechanic was able to assess the damages. The crane was repaired and placed back in service on May 2, 2017. The BSEE Lafayette District conducted an onsite investigation May 10, 2017.

As per API 2C 13.1.1 Boom Angle Limiters and Shut-off Devices: A boom hoist limiter or shut-off shall be provided to automatically stop the boom hoist when the boom reaches a predetermined high angle. Overriding the kick out allowed the CO to raise the boom at the desired angle without the safety device preventing the boom from coming in contact with the boom stop.

The CO failed to follow the safety guidelines documented on the JSA. Bypassing the boom kick-out override safety system introduced a risk to the operation that was not discussed in the JSA. Prior to bypassing this safety device the job should have been stopped and this step discussed and/or added to the JSA. Anytime an operational component changes during the present operation, the present operation must be stopped and adjusted to include the operational change.

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

The CO had the boom positioned at the maximum vertical angle and could not position the basket any closer without overriding the high angle boom winch kick out. The CO bypassed the kick out to complete the additional lifts.

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

\*A Job Safety Analysis (JSA) was completed for the lifts involved which specified "boom angles too high or too low". To eliminate this hazard, the JSA stated "check and make sure boom angle is not an issue before making lifts". The CO failed to follow the safety guidelines documented on the JSA.

\*Bypassing the boom kick-out override safety system introduced a risk to the operation that was not discussed in the JSA. Prior to bypassing this safety device the job should have been stopped and this step discussed and/or added to the JSA. Anytime an operational component changes during the present operation, the present operation must be stopped and adjusted to include the operational change.

20. LIST THE ADDITIONAL INFORMATION:

21. PROPERTY DAMAGED:

NATURE OF DAMAGE:

Crane Boom

Heel of crane boom damaged

ESTIMATED AMOUNT (TOTAL):                    \$32,989

22. RECOMMENDATIONS TO PREVENT RECURRANCE NARRATIVE:

The BSEE Lafayette District office makes no recommendations to the Regional Office of Incident Investigations (OII).

23. POSSIBLE OCS VIOLATIONS RELATED TO ACCIDENT: **YES**

24. SPECIFY VIOLATIONS DIRECTLY OR INDIRECTLY CONTRIBUTING. NARRATIVE:

G110 (C) Does the Lessee perform all operations in a safe and workmanlike manner and provide for the preservation and conservation of property and the environment?

The BSEE Accident Investigation found that the lessee failed to perform crane operations in a safe and workmanlike manner. The following bulleted items document

Arena Offshore LP unsafe crane practices that damaged the bottom boom section. These unsafe practices posed the possibility of severe injury to personnel, major equipment damage and the possibility of environmental impacts.

\*The designated crane operator bypassed the boom kick-out override safety system while making a high angle lift from the drill deck to the production deck extending the boom back to an undesirable position ultimately bending the bottom boom section.

\*Lessee recognized the potential hazard of lifting the boom too high on the job safety analysis but failed to perform the actual lift as per job safety analysis.

\*Crane operator failed to recognize the damaged boom after the occurrence. Failing to notice this hazard (damaged boom) posed numerous safety hazards by continuing to operate the crane. Operating the crane with damaged boom could have had major impacts including personnel injury and/or further equipment damage.

\*Once the safety system is bypassed by a person then the person is ultimately taking the responsibility for the safety system.

25. DATE OF ONSITE INVESTIGATION:

10-MAY-2017

26. ONSITE TEAM MEMBERS:

R. Johnson / J. Mouton / W.  
Guillotte /

28. ACCIDENT CLASSIFICATION:

29. ACCIDENT INVESTIGATION

PANEL FORMED: NO

OCS REPORT:

30. DISTRICT SUPERVISOR:

Elliott Smith

**For Public Release**

27.

APPROVED

DATE: 27-JUN-2017