

UNITED STATES DEPARTMENT OF THE INTERIOR
 MINERALS MANAGEMENT SERVICE
 GULF OF MEXICO REGION
ACCIDENT INVESTIGATION REPORT

1. OCCURRED
 DATE: **11-DEC-2008** TIME: **1930** HOURS

2. OPERATOR: **Tana Exploration Company LLC**
 REPRESENTATIVE: **Groth, Christine**
 TELEPHONE: **(281) 492-3247**
 CONTRACTOR: **HERCULES OFFSHORE DRILLING**
 REPRESENTATIVE: **Guidry, Shannon**
 TELEPHONE: **(713) 350-8368**

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

4. LEASE: **G26023**
 AREA: **EI** LATITUDE:
 BLOCK: **98** LONGITUDE:

5. PLATFORM:
 RIG NAME: **HERCULES 251**

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 **Boom heel**
- H2S/15MIN./20PPM
- REQUIRED MUSTER
- SHUTDOWN FROM GAS RELEASE
- OTHER

6. OPERATION:

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

8. CAUSE:

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

9. WATER DEPTH: **28** FT.

10. DISTANCE FROM SHORE: **20** MI.

11. WIND DIRECTION: **N**
 SPEED: **22** M.P.H.

12. CURRENT DIRECTION: **ESE**
 SPEED: **10** M.P.H.

13. SEA STATE: **5** FT.

17. DESCRIBE IN SEQUENCE HOW ACCIDENT HAPPENED:

On December 11, 2008, at approximately 1930 hours, on Tana Exploration Company, LLC's Lease OCS-G 26023, Eugene Island Block 98, Hercules Offshore Rig 251, the port side crane boom broke and fell during a back-lift operation of a drill cutting's box from the rig deck to the workboat. The rental drill cutting's box weighed approximately 16,500 pounds, with dimensions of 83" wide x 96" long x 44" high. The Crane Operator (CO) reported he swung the load over the water from the rig deck and lowered the box approximately 30 feet from above the workboat. The CO then boomed down to 46 degrees and 65 radius feet, stopped the boom, and proceeded to lower the load to the workboat deck when the crane boom also began descending. The CO attempted to engage the stop pawl in an effort to stop the descent, but could not get the "dog" to lock. The brakes were also applied with no effect on the descent. When the load was approximately 20 feet off the workboat deck, the CO heard the boom break and fall. The CO put the crane controls in the neutral position and abandoned the crane cab. The workboat personnel were clear of the load when it landed onto the workboat deck. The crane boom came to rest against the rig's port side while being suspended by its cables. The load block cable had to be cut to free the load and crane from the workboat. The crane boom was secured to prevent the danger of falling, and no injuries or pollution resulted from this incident.

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

Despite conflicting reports of what actually failed during this lift operation, the preponderance of the evidence supports the statement submitted by the CO. A crane boom fracture at the heel section, caused by metal fatigue, was the probable cause of this incident.

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

As per the annual crane inspection dated August 28, 2008, the following significant findings were noted but not corrected: two bent lattices on the tip section of the boom, one bent lattice on the mid section, and metal fatigue at the mainframe under the rope drums. These deficiencies exacerbated, if not caused, the crane boom failure. Boom lattice damage can negatively affect the overall integrity of the boom by allowing excessive flexion and binding.

According to the incident investigation submitted by Hercules Offshore, the boom's stop pawl failed to properly engage, due to a worn tension spring, resulting in the boom falling. While the worn tension spring is a significant finding, the crane's normal stop pawl function probably would not have prevented the boom failure, nor would it have prevented the descent of the fractured boom. According to the CO, the boom initially remained static while lowering the load, indicating that the boom stop pawl may have actually worked properly until the boom broke. The aforementioned documented deficiencies on the annual crane report, more likely than not, caused the boom to fracture and fall.

20. LIST THE ADDITIONAL INFORMATION:

According to the Hercules Offshore incident investigation report, the boom stop pawl

was not included on their daily pre-use inspection form. Hercules Offshore's plan to update its crane inspection procedures is advisable, since other deficiencies denoted on the Hercules Offshore annual crane inspection are as follows:

- *No current record of wire rope, sling, and pendant line certification onsite.
- *No current record of weight indicator device certificate of calibration onsite.
- *No record of pre-use, weekly, monthly, and quarterly inspections onsite.
- *No current copy of capacity chart (load chart) corrected and configured for this specific crane onsite.

Subsequent to the August 28, 2008 annual crane inspection performed by the Hercules Offshore crane inspectors, the crane was certified for use even with these deficiencies.

21. PROPERTY DAMAGED: **Crane boom and associated equipment** NATURE OF DAMAGE: **Severe crane structural damage**

ESTIMATED AMOUNT (TOTAL): **\$35,000**

22. RECOMMENDATIONS TO PREVENT RECURRENCE NARRATIVE:

The MMS Lafayette District office recommends that the MMS Regional Office of Safety Management (OSM) inform headquarters of pending Mobile Offshore Drilling Units (MODUs) crane issues. Headquarters should determine from the U.S. Coast Guard (USCG) the timing for the USCG updating their crane regulations, in order that the updated regulations can be utilized as the basis for determining future OCS crane violations.

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

24. SPECIFY VIOLATIONS DIRECTLY OR INDIRECTLY CONTRIBUTING. NARRATIVE:

In accordance with USCG regulations, cranes installed on MODUs are regulated by the USCG. Thus, the MMS lacks jurisdiction to address the aforementioned deficiencies and possible violations.

25. DATE OF ONSITE INVESTIGATION:

12-DEC-2008

26. ONSITE TEAM MEMBERS:

**Douglas Frerich / Johnny Serrette
/ Leo Dartez /**

29. ACCIDENT INVESTIGATION

PANEL FORMED: **NO**

OCS REPORT:

NO

30. DISTRICT SUPERVISOR:

Elliott S. Smith

APPROVED

DATE: **10-FEB-2009**

INJURY/FATALITY/WITNESS ATTACHMENT

OPERATOR REPRESENTATIVE

INJURY

CONTRACTOR REPRESENTATIVE

FATALITY

OTHER _____

WITNESS

NAME :

HOME ADDRESS :

CITY :

STATE :

WORK PHONE :

TOTAL OFFSHORE EXPERIENCE :

YEARS

EMPLOYED BY :

BUSINESS ADDRESS :

CITY :

STATE :

ZIP CODE :