COS SAFETY SHARE

WHAT WILL WE DO TO PREVENT THIS FROM HAPPENING HERE?

SHEAVE ASSEMBLY FAILURE DURING HEAVY LIFT

What happened?

Personnel were conducting a heavy lift from the contracted work boat. The load was raised from the boat to the platform into its landing position. As the load was being lowered into position, witnesses stated that they observed the load contact the landing area, then heard a noise and saw one of the composite sheaves fail and shatter into pieces.

One of the pieces weighing approximately 16 lbs. fell approximately 140 ft to the top deck of the platform striking one drilling employee (IP #1) in the right forearm and right foot. Another drilling employee (IP #2) who was standing next to IP #1 was struck on the left hand. Both IPs were treated with First-Aid and returned to work.

What went wrong?

The equipment failure occurred due to deterioration within internal seals, compromising the integrity of the bearing assembly. There was also a bearing grease seal failure due to deformation and side loading of the sheave assembly.

Why did it happen?

Corrosion/Fatigue of the outer bearing race coupled with mild side loading during the heavy lift caused the sheave assembly failure. The age of the sheave/bearing, fatigue, and corrosion of the sheave bearing also contributed to the incident.

During the investigation it was observed that OEM and distributor followed industry guidance in terms of preventive maintenance program. However, the current maintenance plan is not adequate to detect this type of failure.

What areas were identified for improvement?

A preventive maintenance system should be highly effective in detecting impending failures in the dynamic components of the crane. Operator plans to incorporate a defined detailed sheave inspection program, at 5-year intervals, with consideration to replace the sheave at no more than 10-year intervals.

2019003

CENTER FOR OFFSHORE SAFETY