MARINE MINERALS ADMINISTRATION
SAFETY ALERT

Safety Alert No. 529
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Inspect and Test Drawworks Brakes to Prevent Unintended Block Movement

Background:

Three incidents involving drawworks brake failures have been reported on a platform rig since June 2025. Unexpected movement of the traveling block or drill string can lead to dropped objects, injuries or loss of well control. It can also result in damaged tubulars, well-control equipment and other rig equipment.

Incident 1:

During a brake test, the driller set the service and emergency brakes and chained down the service-brake lever. The driller observed the drill pipe slowly slip into the hole. The driller and tool pusher immediately applied more force to the service-brake lever, but the pipe continued to descend at the same rate. The movement caused a 2-inch air-operated Chiksan plug valve to separate from the cement head. Black smoke was observed coming from the drawworks brakes. The weight on the traveling block was about 590,000 pounds before the slip. The drill pipe stopped moving when the weight reached about 431,000 pounds.

Incident 2:

The driller observed the drill string move downward and immediately applied the drawworks service-brake lever. The brake stopped the movement after the drill string had traveled approximately two feet and bowed above the rotary.

Incident 3:

With the parking service brake set, the block unexpectedly descended approximately 10 feet over the course of 15 seconds, placing approximately 25,000 pounds of set-down weight on the stand. The crew stopped movement with the manual brake lever. The crew then released

parking brake, hoisted the block to restore normal block weight and reset the parking brake. The brake held after the reset.

Incident Findings:

- **Incident 1:** The maintenance supervisor confirmed that grease had contaminated the friction pads, reducing braking performance.
- **Incident 2:** A leaking air valve was found in the driller's brake control console. The leak went undetected during the previous incident investigation or subsequent inspection.
- **Incident 3:** Rig personnel could not replicate the parking-brake disengagement. The manufacturer published a safety bulletin recommending installation of a T and/orifice valve, intended to address pressure from the Crown-O-Matic/Floor Saver system that could disengage the parking brake.

Therefore, operators and their contractors should consider the following, as appropriate:

- Follow the original equipment manufacturer's lubrication procedure and use only the specified quantity and type of grease. Keep grease off brake friction pads, rotors, calipers, or other braking surfaces. After lubrication, inspect the friction surfaces for contamination before returning the system to service.
- Require a documented inspection of friction pads, rotors, calipers, guide pins, air lines, fittings, control valves, and brake-control consoles after every maintenance activity that could affect the braking system.
- Conduct and document functional tests of the service brake, emergency brake, parking brake, Crown-O-Matic, Floor Saver, pilot-air circuit, and manual brake controls. Confirm that the brake circuits engage, hold, and release as designed without unintended movement.
- After an unintended movement of the traveling block or drill-string remove the drawworks from normal service until the cause has been investigated, corrective actions have been completed, and the brake system has been functionally tested.
- Reevaluate all applicable manufacturer bulletins, product safety alerts, prior incident reports, and unresolved recommendations related to the drawworks air-control system.
- Have management and operations personnel review BSEE Safety Alert 425, Drawworks Parking Brake Failure, issued Aug. 16, 2021, for lessons, controls, and recommendations concerning unexpected movement, braking systems, and equipment safeguards. Incorporate applicable actions into the rig's preventive-maintenance, testing, training, and management of change programs.

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A Safety Alert is a tool used by the Marine Minerals Administration to inform the offshore oil and gas industry of the circumstances surrounding a potential safety issue. It also contains recommendations that could assist in avoiding potential incidents on the Outer Continental Shelf.

As of July 10, 2026, the Department of the Interior has reunified the Bureau of Ocean Energy Management and the Bureau of Safety and Environmental Enforcement into the Marine Minerals Administration, which will oversee the responsible development of the nation's offshore energy and marine mineral resources with an integrated focus on safety, environmental protection and efficient oversight. For more information, visit Transition to the Marine Minerals Administration | U.S. Department of the Interior.

CATEGORY: Drilling, Lifting