

Energy Safety Canada is the national safety association for the oil and gas industry. We develop and support common industry safety standards, deliver effective learning systems, share data analysis and safety expertise with workers and employers, and advocate for worker health and safety. Our goal is the same as industry's – zero injuries, zero incidents.

Share and Collaborate / Energy Safety Canada works collaboratively with organizations to develop Safety Alerts that improve hazard awareness and injury prevention. Canada's leading oil and gas industry trade associations support the sharing of information to help companies of all sizes improve safe work performance.

Disclaimer / This document is intended to be flexible in application and provide guidance to users rather than act as a prescriptive solution. Recognizing that one solution is not appropriate for all users and situations, it presents accepted guidance that generally apply to all situations.

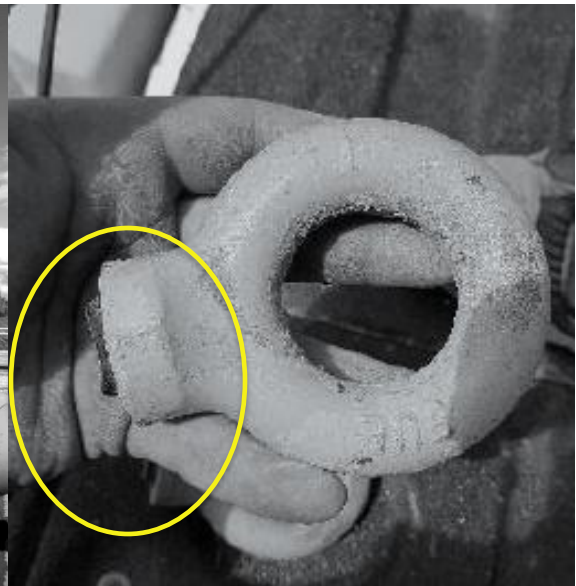
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SHOULDER EYE BOLT FAILURE DURING EQUIPMENT LIFT

DESCRIPTION:

A fracturing (“frac”)/ wellhead assembly was lifted approximately half an inch to adjust a support (levelling jack) stand. The lift was conducted using the horizontally - attached shouldered eyebolts on the equipment. The orientation of the eyebolts required an angular lift. The lift took place and the eyebolt shanks sheared off. The wellhead equipment was secured and no other damage occurred.



EYEBOLT LOCATED ON WELLHEAD

BROKEN PORTION OF EYEBOLT SHANK

CAUSE:

The lift exceeded the angle load capacity which caused excessive strain on the eyebolts resulting in failure.

CONTRIBUTING FACTORS:

Angular lift significantly reduces lifting rated capacities.

Avoid the hazard of not knowing.

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CORRECTIVE ACTIONS:

- » Pre-plan each lift and understand engineering limitations of each component, including eyebolts
- » Before lifting, check with manufacturer specifications for rated load capacities and guidelines of eyebolt angle. Investigate appropriate methodology if using angled lifts. ie. safety swivel hoist rings
- » Shoulder eyebolts should not be used for angular lifts greater than 45°
- » Before use, inspect eyebolts for damage or alterations (grinding, nicks, gouges, distortions, worn, bent, etc.)
- » Check that eyebolts are stamped with name or trademark of manufacturer, size or capacity and grade. All information should be legible
- » Eyebolts should not be painted or otherwise coated when used for lifting; such coatings make it difficult to inspect for defects or wear indicators
- » Do not shock load eyebolts; use a gradual lift
- » No greater load should be applied to an eyebolt than the rated capacity