Date: 15 July 2021

Subject: Haldex 3030 Long Stroke brake chamber failures

Attendees: Sara Sorge – NCC
Nate Seymour – ODI
Dan Pearse – VRTC
Chris Jamison – Whistle Blower (former Haldex employee: Technical Service Rep)

Chris worked for Haldex for 16 yrs, 7 yrs in actuators.
Worked on recalls 14E and 15E
2019 deposition was settled out of court as have all suite filed against Haldex relative to this matter.

PACCAR – KW is the primary user of the 3030 long stroke high output chamber
12-18 months is typically failure of these
Normal life is expected to be 4-5 yrs
Failure mode range from diaphragm puncture: light drag = smoke, heat = fire, to total loss of vehicle and cargo
PACCAR instructed Dan Mills to report to NHTSA after Haldex would not assist.
PACCAR stopped using Haldex (Tier 1 supplier) $30M annual contract.

2 events resulted in a jack knifed tractor-trailer
Indiana Well company suited and had dash camera video. Approx. 1 second from chamber failure to loss of control. No death or injury

Haldex knows its design is defective but won't fix. Corporate (Sweden) stated after 2014/2015 recall, no more talk about recalls. "Hear no evil, see no evil, speak no evil" mentality. Randy refused to help customers.

Failures are more prevalent in northern part of country due to road salts.

Haldex has since discontinued use of High Output 30/30

Haldex is an assembler. They do not produce their own spring. It is their specification and they do test to verify. Chris stated that continual testing was being done as the supplier could not meet the spec.

Tapered springs are far superior to constant diameter. They are also 2-4x as expensive. Haldex focused on cost and would not consider tapered.

Warner and Martin trucking both discontinued use of Haldex brake chambers.

Bendix and MGM are other brake suppliers.
In 2015 Bendix introduced the "no touch" chamber to eliminate coil clash.

Power springs typically fail at the ends of the coil. This region is called the dead coils. Normally 1-1.25 coils at each end. Most springs have 4-6 coils. The middle (normally 3) coils are the active coils and produce force. The dead coils do not produce force, the hold the spring in place.

At some point the gold Seal high output went through a cost reduction. The spring was made with less material and packed into a standard chamber.

Terminology:

Air caged:	This is when the spring is compressed, and physical stops are in contact
Release pressure:	This is typically 65-70 psi and when the spring is fully compressed.
Hold off pressure:	This is typically less than the release pressure due to friction in the system that holds the spring fully compressed. Think of it as after the spring is fully compressed you don't need as much pressure to hold it there (kinda like torque of a bolt: static friction verse kinetic friction)