



**DEPARTMENT OF MINES
WESTERN AUSTRALIA**

SIGNIFICANT INCIDENT REPORT NO. 1

PRESSURISED GEARBOX EXPLOSION

INCIDENT

During routine maintenance of a conveyor belt gearbox a maintenance person attached a compressed air hose to the breather fitting of the gearbox to accelerate the draining of the oil out of the gearbox. After attaching the hose compressed air was introduced into the gearbox at a pressure of approximately 680 kPa (100 p.s.i.); the oil dip-stick was left in its normal position in the gearbox.

The gearbox disintegrated and the top and sides of the gearbox casing blew out. The maintenance person was struck by the inspection plate and or parts of the casing and was seriously injured.

CAUSE

The gearbox casing was not designed to take internal pressure of the magnitude applied; all significant openings were effectively sealed, allowing full main air pressure to build up.

COMMENTS AND PREVENTATIVE ACTION

Compressed air should never be applied to any closed container which is not designed to withstand the maximum pressure that may result with an adequate factor of safety.

Gearboxes and similar type of appliances are not normally designed to withstand relatively high internal pressures.

Draining of oil from gearboxes should be done by either gravitation or a mechanical pump connected externally to the drain point or other opening in the casing.

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SAFETY AWARENESS SAVES LIVES