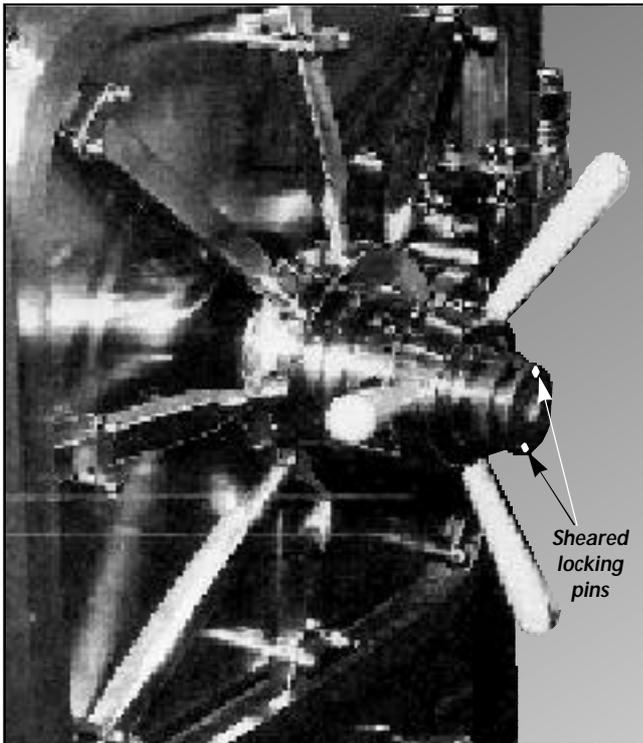


Nº 6: **AUTOCLAVES—potential hazard with interlock doors under pressure**

April 1996



Background

In October 1995 at a hospital in Adelaide an autoclave door was opened whilst the chamber was under full steam pressure. This action resulted in the operator sustaining extensive injuries, including concussion, steam burns and hearing damage. Other damage was caused by cracking to a brick wall and a thermal fire alarm activated.

On investigation it was found the door interlock was inoperative because the locking pins were sheared. The locking pins prevent the door being opened whilst the chamber is under pressure (*see picture*). The state of the locking pins was attributed to lack of maintenance and misuse of the door.

Introduction

Autoclaves which are made with multi-finger closing of door arrangements and having interlocks to stop door being opened under pressure can, under certain conditions, expose the operator to extreme risk of

injury. The door interlocks are activated by an internal diaphragm pushing a shaft backward to engage locking pins. This can malfunction if the diaphragm is faulty or the locking pins are sheared. This will allow the operator to open the door while chamber is under pressure.

NB: The likelihood of the diaphragm malfunctioning is more remote than the shearing of the locking pins.

Sources of Exposure

This hazard exists with autoclaves that have multi-finger closing arrangements for the door, fitted with interlocks activated by locking pins.

Prevention

Owners of these autoclaves should ensure all staff who operate these machines are trained in their safe operation. The operators must follow the Operating Procedures which state '*Do not open until steam pressure in chamber is zero*'. These procedures must be located on or near the machine.

All staff should be provided with guidance to the hazards and risks associated with the autoclaves, showing how the door interlock mechanisms operate for their protection, pointing out that the door should not be forced when it is in a locked position.

Maintenance staff can improve the locking pins by using material of a higher shear strength than brass and by increasing the number of pins used, so that shearing will not occur in normal operation.

Maintenance staff should check on a regular basis that door interlocks are working correctly and that such details are logged in the maintenance schedules.

Further Information

Further advice on legislative requirements relating to autoclaves can be obtained by phoning the nearest office of the Department for Industrial Affairs listed in the Adelaide (Telstra) White Pages.