

No. 114

IN THIS ISSUE

PAGES FROM OUR CALENDARS

Newsletter 90 (August 1976) was devoted entirely to pictures from our Safety Calendars. It proved so popular that we are presenting a further selection in this Newsletter. If you would like an extra copy to browse through from time to time, please let us know.

Our Safety Calendars started in January 1970 as loose sheets, issued monthly. Complete calendars have been issued from 1973 onwards. Since 1976 there has been a common theme for each year. Pages 2-7 of this Newsletter therefore deal with the control of leaks and pages 7-13 with features that should be checked regularly. The remaining pages deal with some miscellaneous topics.

Our 1979 calendar will deal with "belt and braces" (or "second chance") design and operation. If you would like a copy, please ask Mrs T at the address below (ext P.2845).

In recent years the pictures have been drawn by Sydney Coulson of Newcastle, a free-lance artist, and it is a pleasure to acknowledge the help and understanding received from him, and from George Crawford of Agricultural Division Publicity Section.

The pictures in this Newsletter may be reproduced without restriction but we would like to receive copies of any publications in which you use them.

TREVOR A KLETZ

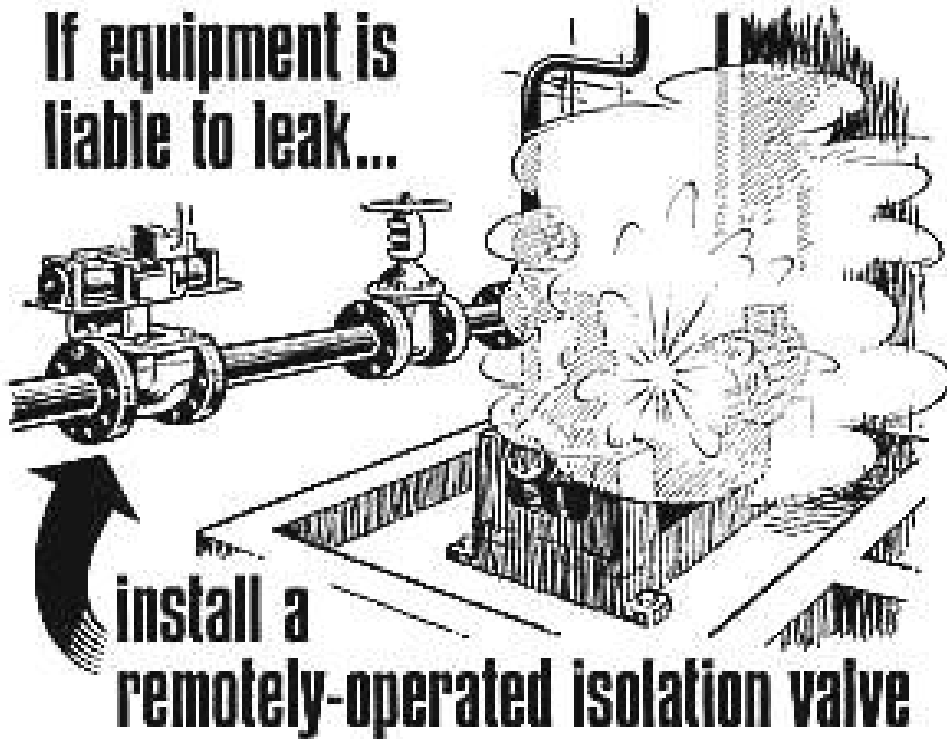
August 1978



IMPERIAL CHEMICAL INDUSTRIES LIMITED

PETROCHEMICALS DIVISION

If equipment is liable to leak...



install a remotely-operated isolation valve

If a remotely-operated isolation valve is installed—



—locate the control at least 30 feet away from the source of leak

If leaks are liable to occur...



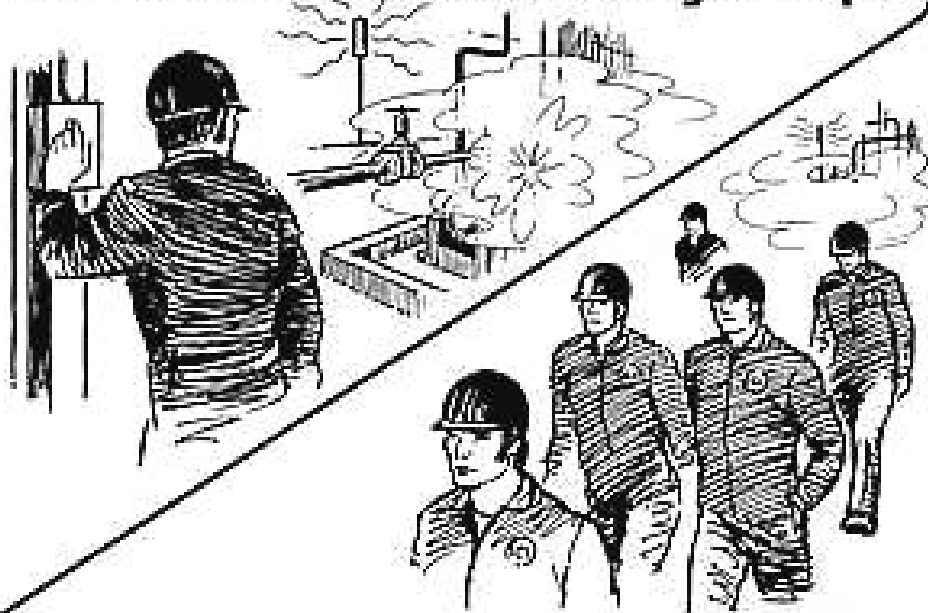
INSTALL GAS DETECTORS

If there is a leak of flammable gas or liquid...



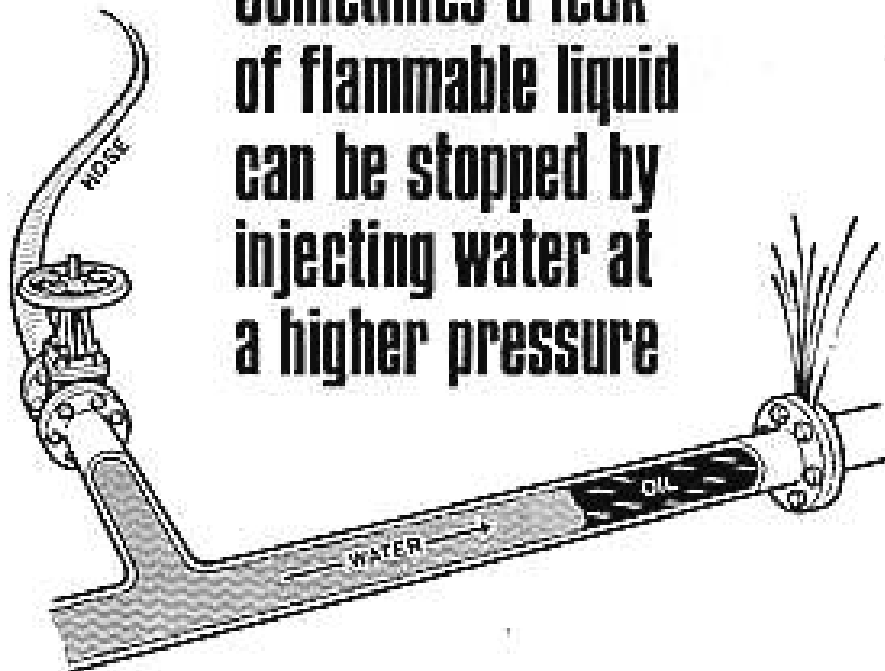
... CALL THE FIRE BRIGADE

If there is a leak of flammable or toxic gas or liquid

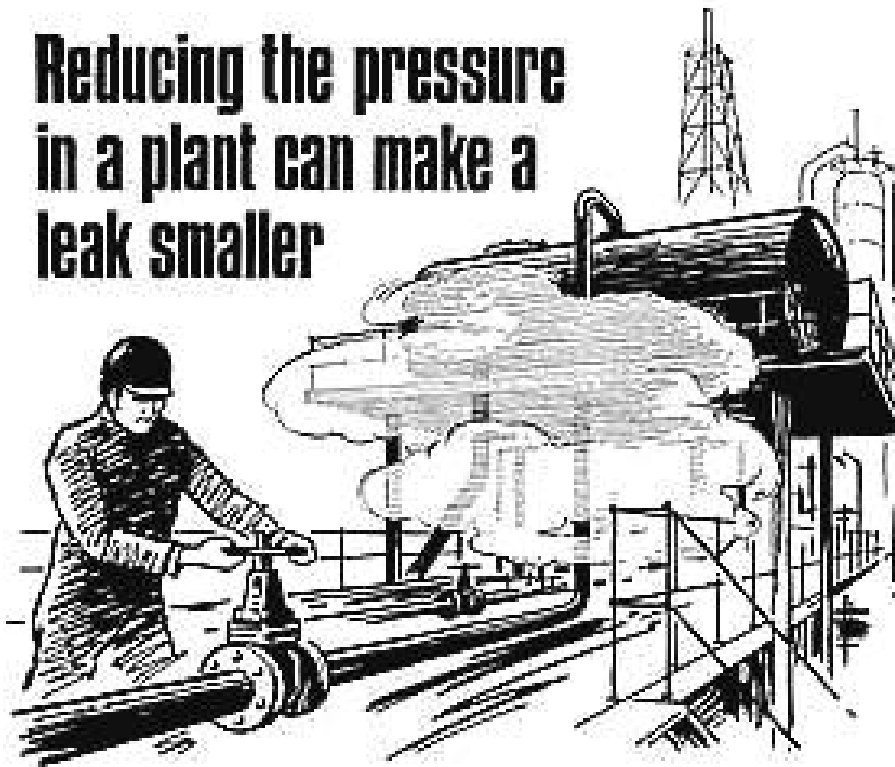


tell people who are not needed to leave the area

**Sometimes a leak
of flammable liquid
can be stopped by
injecting water at
a higher pressure**



**Reducing the pressure
in a plant can make a
leak smaller**



**If the only valve that will stop a leak of flammable gas is
near the leak...**



Do not rush into the leak — the gas or vapour may ignite

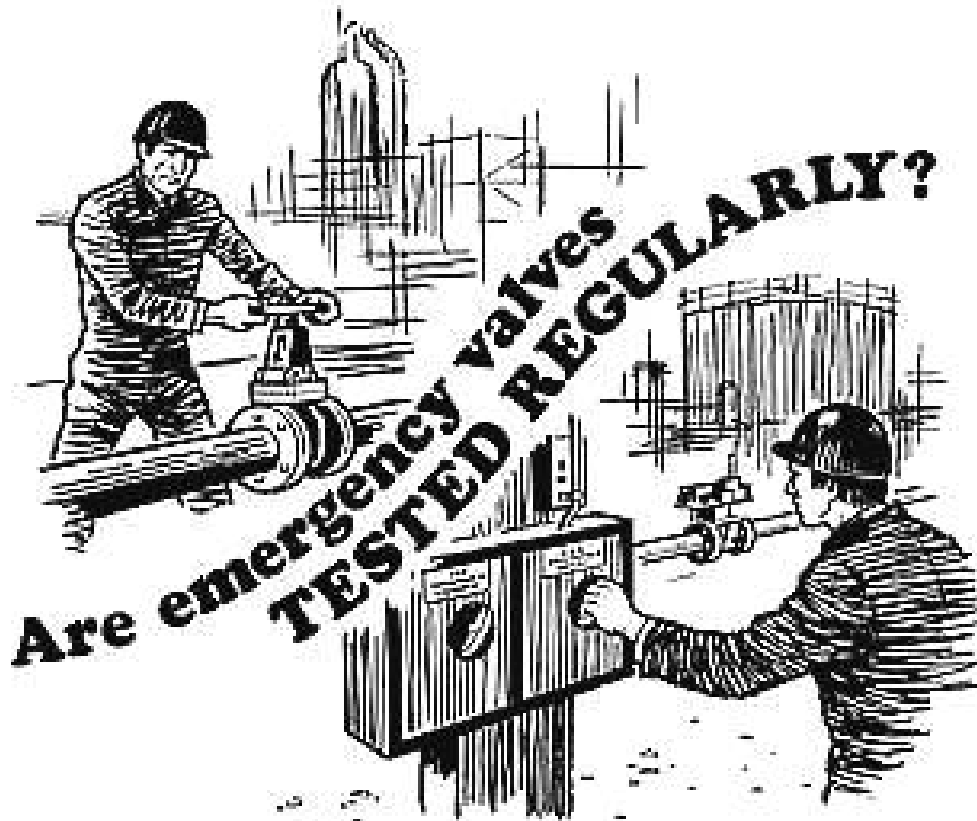
If the only valve that will stop a leak of flammable gas is near the leak...



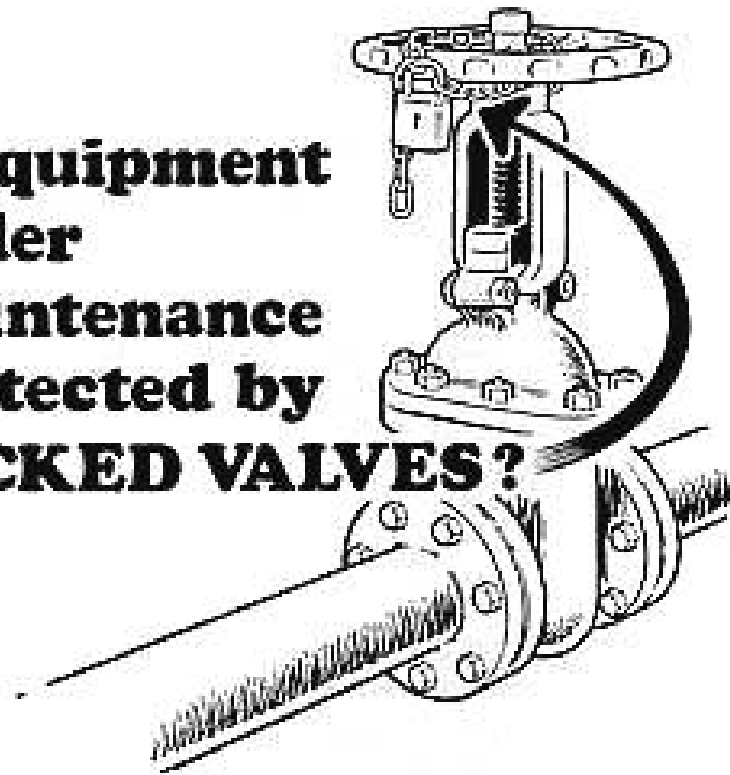
Don't wait for a leak to occur...



**imagine there is one,
and discuss what you would do.**



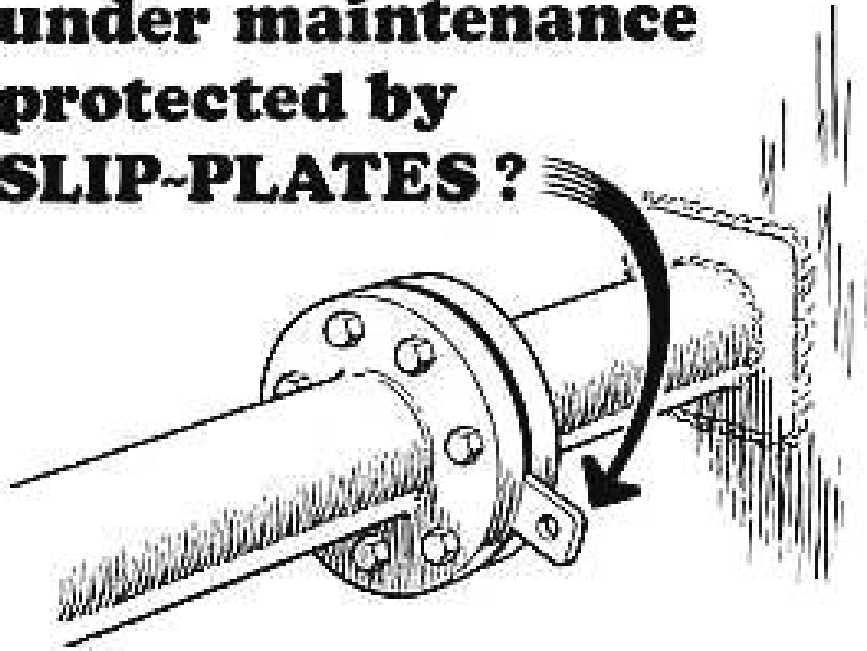
**Is equipment
under
maintenance
protected by
LOCKED VALVES?**



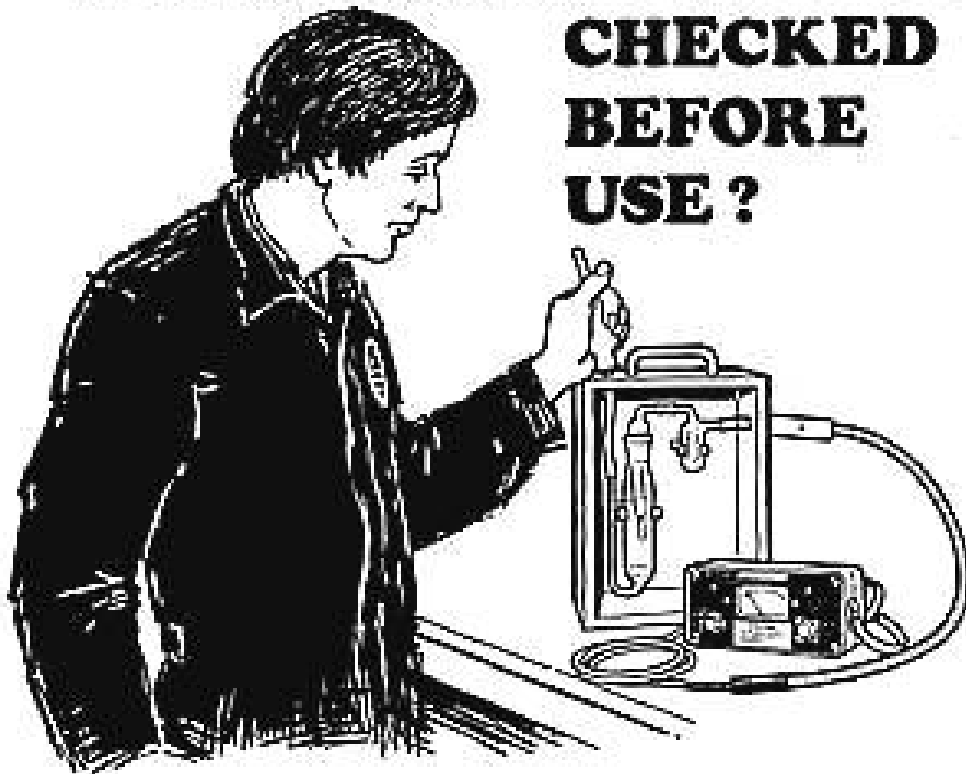
**Is equipment
under maintenance
LABELLED
or TAGGED?**



**Is equipment
under maintenance
protected by
SLIP-PLATES ?**



**Are flammable gas detectors
CHECKED
BEFORE
USE ?**



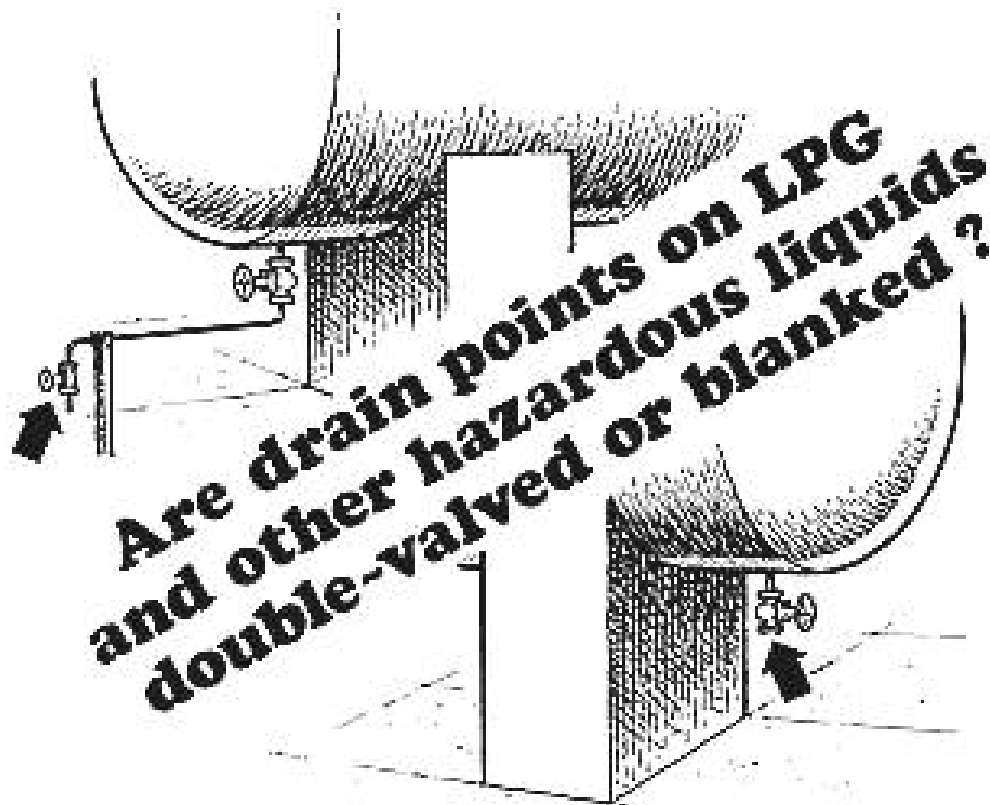


**Is correct
PROTECTIVE CLOTHING
worn?**

**Are samples
carried in containers?**

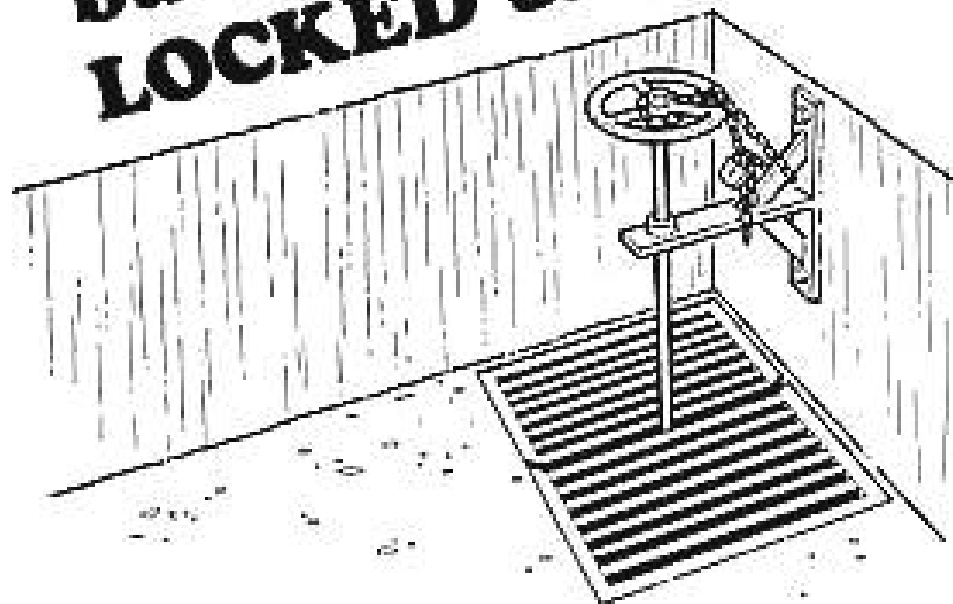


**Are flame traps
inspected
regularly?**

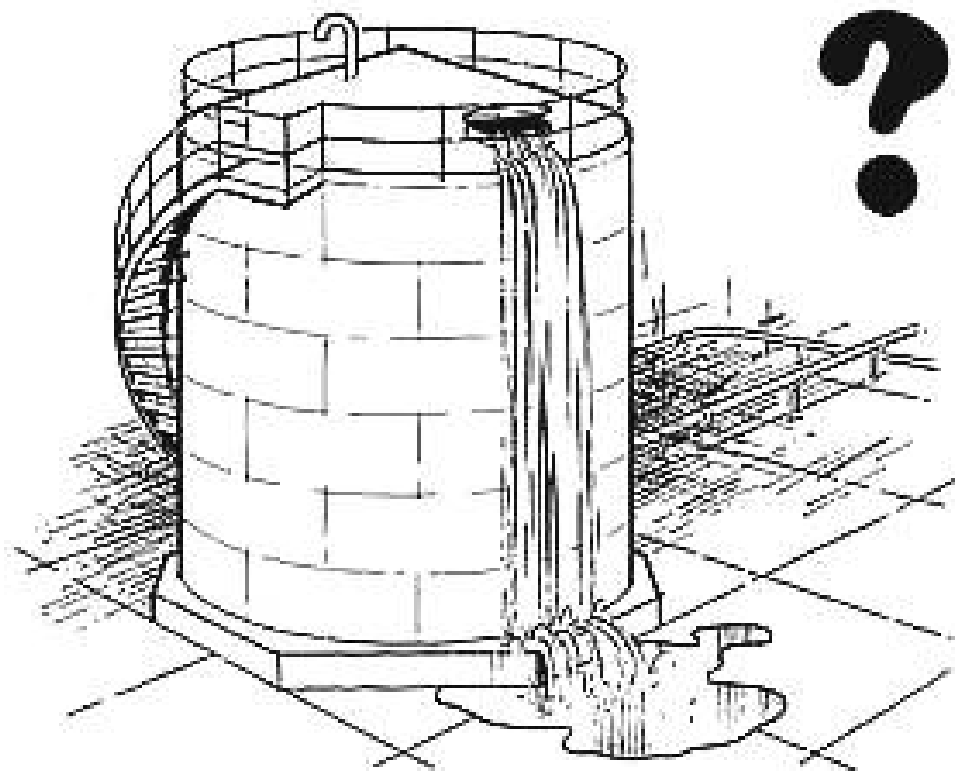


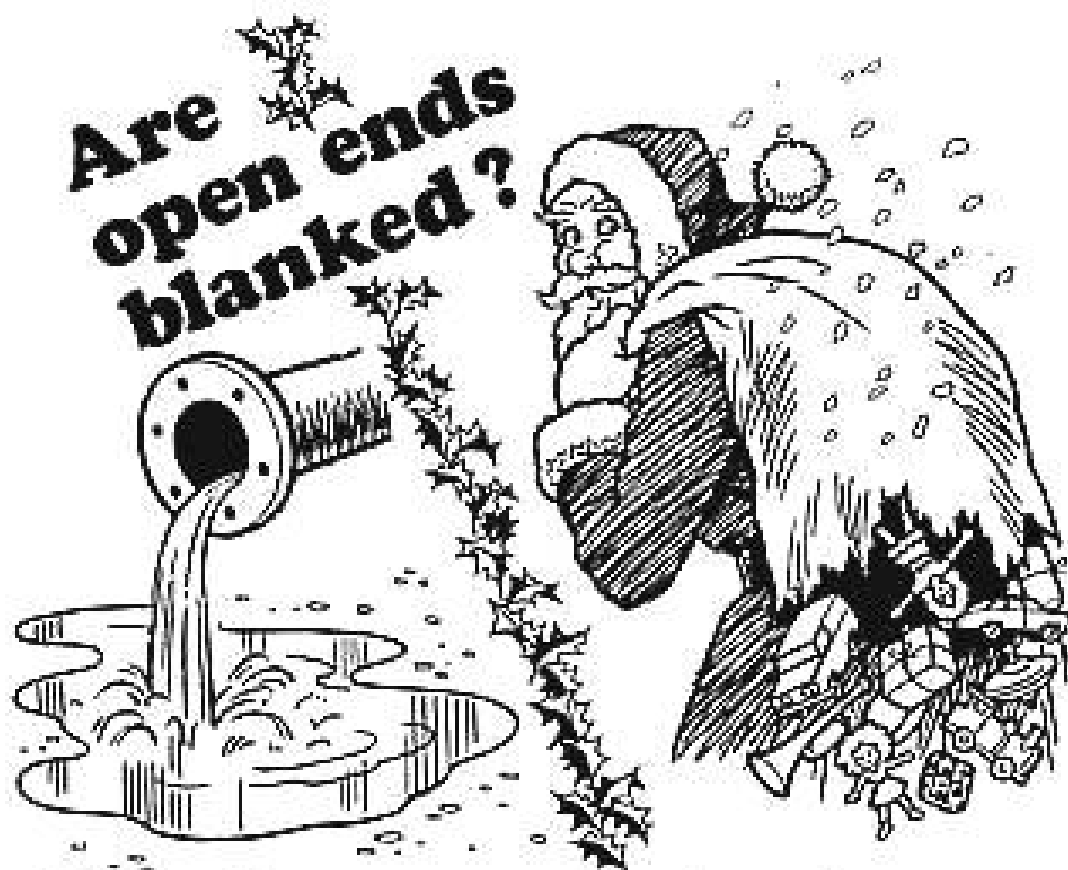
**Are drain points on LPG
and other hazardous liquids
double-valved or blanked?**

**Are bund drain valves
LOCKED SHUT?**

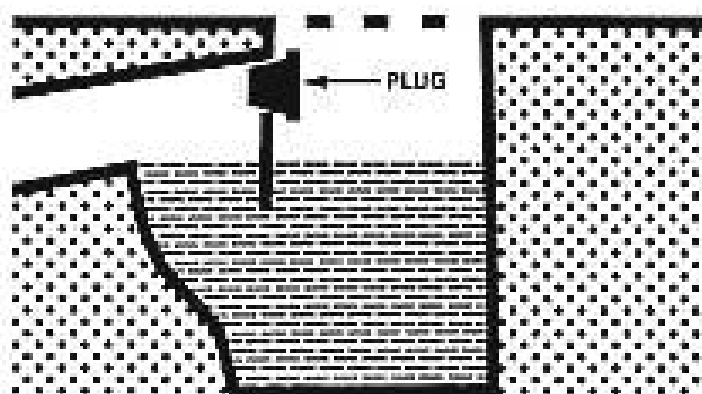


ARE TRIPS TESTED

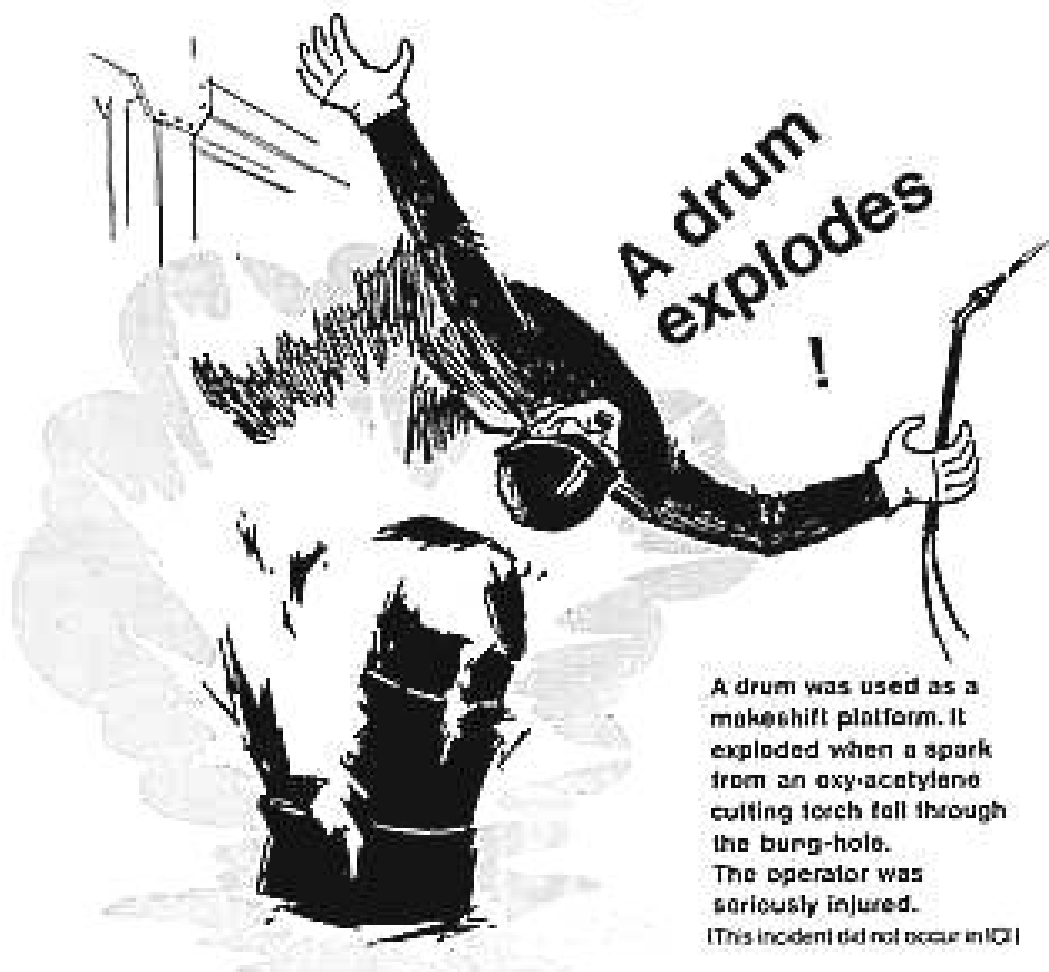




The plug was missing from the rodding hole so oil vapour got out past the U-bend
A DRAIN CAUGHT FIRE



CHECK YOUR DRAINS

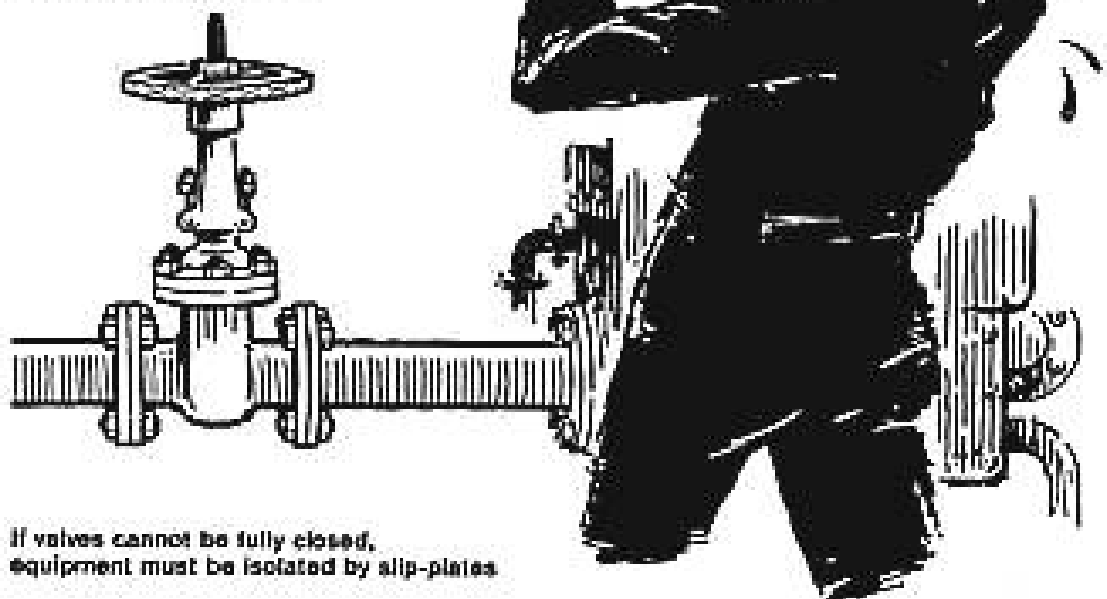


While the fitter was dismantling
the equipment

OIL SPRAYED OUT

The protruding spindle shows
that the isolation valve was not
fully closed.....

Dirt in it cleared suddenly



If valves cannot be fully closed,
equipment must be isolated by slip-plates.

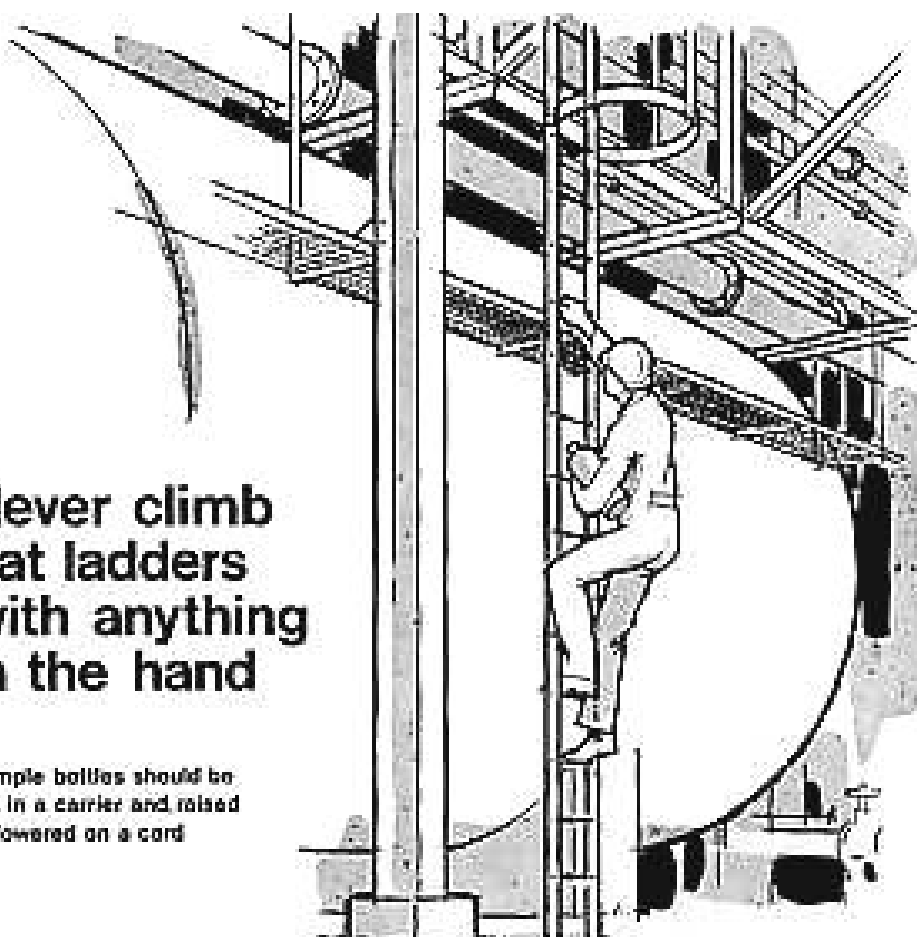
A process supervisor closed the valve as far as it would go. He realised that the spindle was projecting and that the valve was not fully closed but he could not close it any more and he assumed that it was blocked with debris. He opened the drain valve on the equipment and proved that the isolation valve was not leaking. There was no other isolation valve further back. He therefore, issued a permit for the fitter to dismantle the equipment. It was a quick job so he did not ask for a slip-plate to be fitted. He locked the isolation valve (this should have been shown on the drawing).

While this fitter was dismantling the equipment the choke suddenly cleared and oil sprayed out.

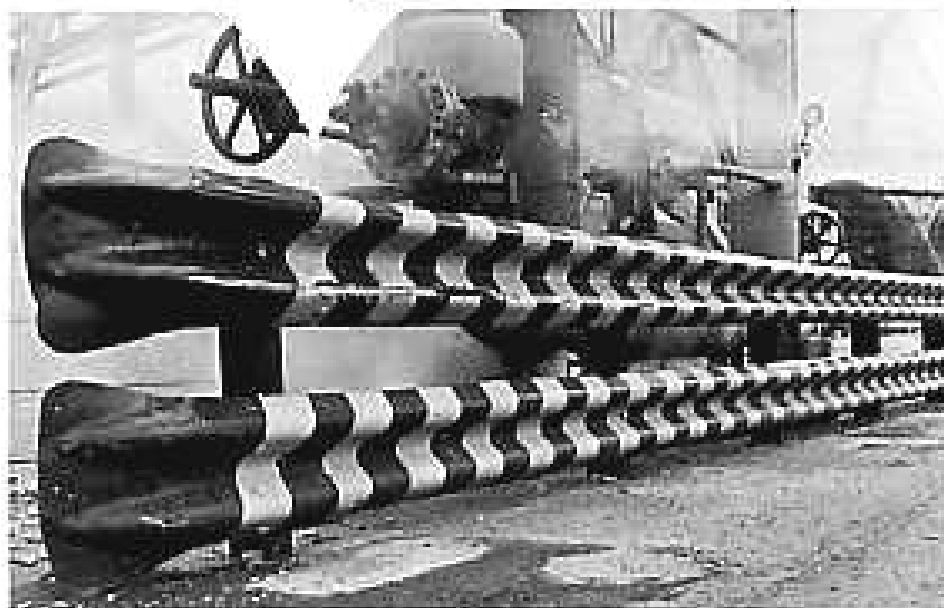
If a valve cannot be closed fully - as in this case - a slip-plate should be fitted, even for a quick job. The slip-plate is fitted under controlled conditions and should the choke suddenly clear while it is being fitted, the situation is under control.

Never climb cat ladders with anything in the hand

Sample bottles should be
put in a carrier and raised
or lowered on a cord



This crash barrier prevented a spillage



▶ Do you need any more barriers on your plant?

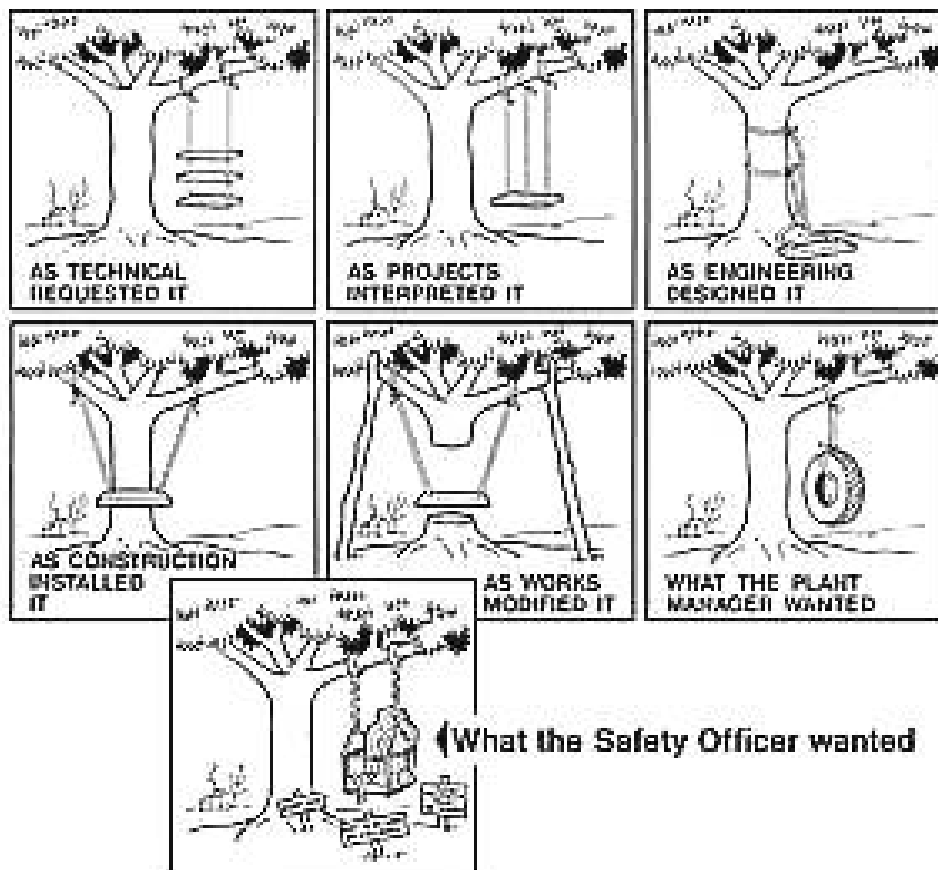
FIRE FIGHTING

QUICK REFERENCE CHART

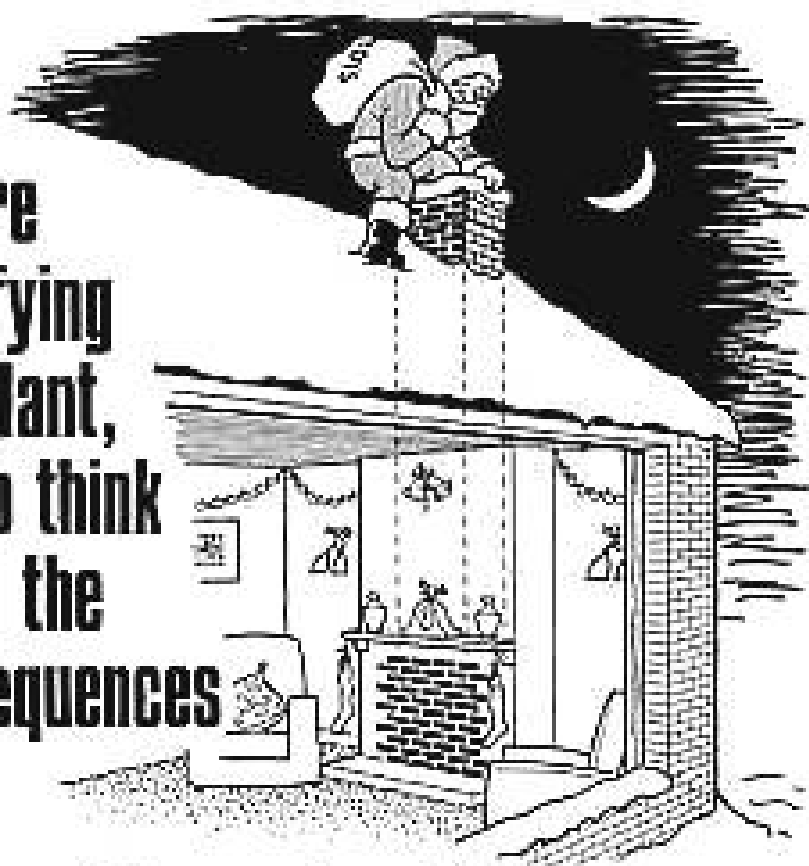
What's burning?	Water	Monnex	BCF	CO ₂
Wood, paper, cloth.	BEST	Do not use- Ineffective.	Fair	Do not use- Ineffective.
Flammable liquids, oils, greases.	Do not use- Spreads fire	BEST	Good	Fair - Limited capacity.
Live electrical equipment and wiring.	Do not use- Dangerous.	Good, but leaves mess.	BEST	Good- Can shock delicate equipment.

BURNING METALS

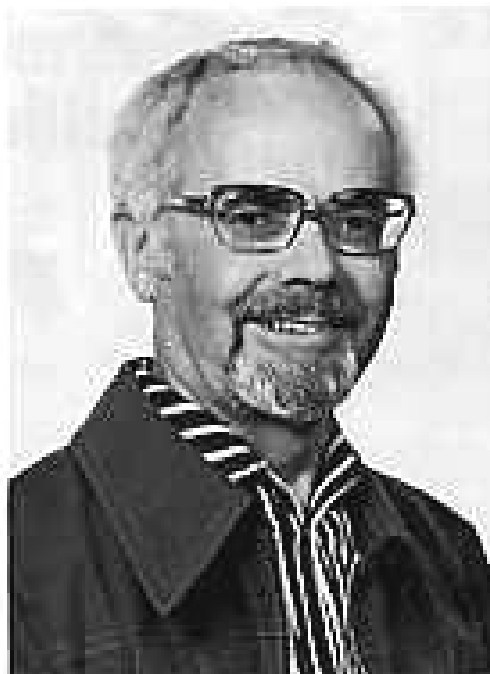
Aluminum, potassium, magnesium, sodium → Do not use any of the above. Use only special powders such as the sodium powder made by JCB Ltd (MAGNOCOR) Ltd/UK.



**Before
modifying
the plant,
try to think
of all the
consequences**



Our Artist

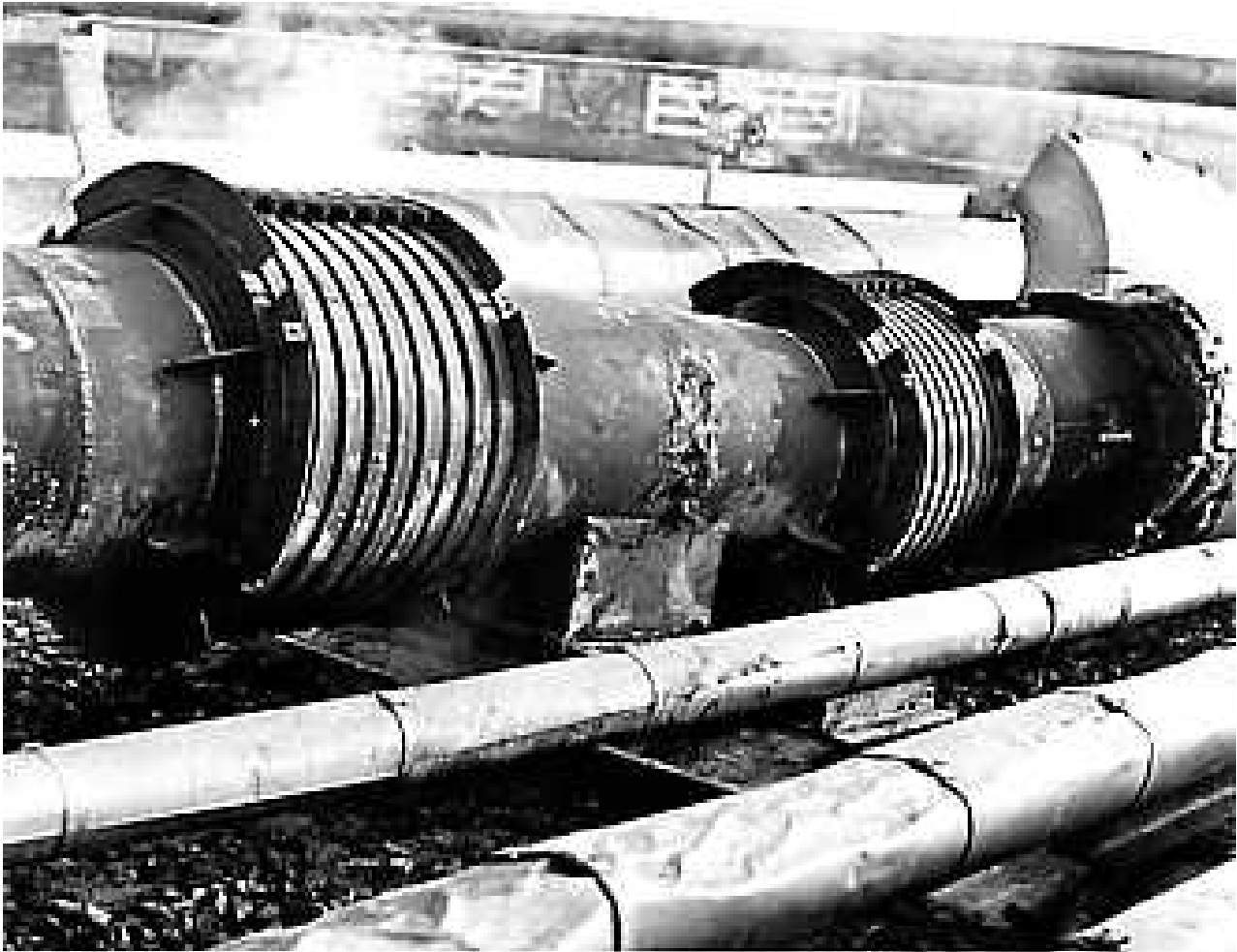


Syd Coulson was born in the North-East, but spent his boyhood in Lincolnshire. He studied art at Kings College, Newcastle and spent many years in technical illustration before setting up as a freelance designer and illustrator specialising in technical subjects.

He now lives in Newcastle and his hobbies are swimming, walking, reading and water-colour painting.

An Engineer's Casebook No 14

LP STEAM MAIN EXPANSION BELLOWS AND ANCHOR FAILURE.



Much of the equipment on the Division's plants is registered and inspected in accordance with the ICI Code B1.4 "Registration and Periodic Inspection of Pressure Vessels". As such it receives regular attention by the Division's Equipment Inspectors and Plant Engineers.

Some low pressure piping carrying non-hazardous fluids is not registered. However that is not to say that it is immune from failure. This photograph is of an anchor with axial expansion bellows units on either side installed in an LP steam main. Failure was initiated through operating the main at a temperature in excess of that for which it was designed. It is likely that the damage took place many months, if not years, ago though it was only noticed within the last six months.

We should all be observant whilst carrying out the daily round and common tasks.

E H Frank