

The inspections include 119 new power boilers, aggregating 1,467 horse-power, manufactured in the Dominion, and 6 new boilers, aggregating 857 horse-power, imported from abroad.

The inspections also include 74 new air-receivers made in the Dominion and 23 made abroad, and 572 new unfired pressure vessels, other than air-receivers, made in the Dominion and 118 made abroad.

The use of steam to drive machinery continues its downward trend. The number of such steam plants was 1,640 in 1944-45, 1,604 in 1945-46, and 1,500 in 1946-47. Despite the decline in the use of steam for power-generation, there is an overall increase in the number of steam boilers inspected annually (4,499 in 1944-45 (total); 4,551 in 1945-46; 4,593 in 1946-47), the increase being attributed to the more extensive use of steam for heating and industrial processes, other than power-generation, where precise control of temperature which steam can give is an essential requirement. There is an unsatisfied demand for most types of steam boiler.

Two explosions occurred from pressure vessels during the year ended 31st March, 1947, both with great potential danger to life and limb, yet fortunately causing no personal injury.

One explosion, the more serious because it involved ammonia gas, which is lethal, arose from the rupture of the gas-welded seams of an ammonia-receiver. The longitudinal seam of the shell ruptured for its whole length and the shell was projected vertically upwards and fractured a roof truss in its path. A few nearby residents were forced to leave their houses by reason of the presence of escaped ammonia gas, and gardens suffered considerably. The welds of the ammonia-receiver had been made about thirty years before and were extremely defective from the time of the vessel's construction.

The second explosion concerned an air-receiver installed in a garage. Here also, the welding failed around the seam which secured the end plate to the cylindrical shell. The explosion projected the shell and top end of the receiver through the roof of the building. The receiver fell into the street without causing any personal injury.

It is difficult without the aid of x-ray or gamma-ray equipment to detect internal defects in welded seams. Close control over the competency of welders of new air-receivers over 5-cubic-foot capacity and all ammonia pressure vessels is given by the Department, and welders are now required to weld test specimens in every case.

MACHINERY

The following statement shows the number of machines, machinery plants, lifts, cranes, hoists, and tractors (Group "B") inspected during the year ended 31st March, 1947, with the corresponding figures for 1946 also shown :—

	1946-47.	1945-46.
Machines driven by steam power in 1,500 plants	7,234	8,323
	(1,604 plants)	
Machines driven by power other than steam in 12,159 plants.. .. .	87,074	83,291
	(11,618 plants)	
Electric-power-supply stations	138	140
Lifts	3,561	3,563
Cranes	595	571
Hoists	1,999	1,950
Tractors	337	363
Total inspections in Group "B" ..	100,938	98,201
Total inspections in Group "A" ..	15,652	14,761
Grand total of inspections (Group "A" plus Group "B") ..	116,590	112,962