

During the year instructions to Surveyors of Ships have also been issued relating to the sizes of shafts for steam-engines and internal-combustion engines, repairs to boilers, chain cables for auxiliary scows, and surface ventilation of coal cargoes. All holds, bunkers, and other compartments of vessels in which coal is carried must be provided with an effective system of surface ventilation to ensure the free escape of the explosive gases given off by the coal. As spontaneous combustion is promoted by the introduction of air into a mass of coal, ventilation into a mass is prohibited, and the Department cannot accept any arrangement of ventilators which would deliver air into the body of the coal stowed in any compartment.

INSPECTION OF MACHINERY.

The number of inspections carried out during the year total 27,853, as compared with 25,111 during the year 1923-24.

There were reported to the Department during the year 19 fatal and 105 non-fatal accidents. Seven of the fatal accidents were not due to machinery causes in respect of which the Department had any responsibility whatever. In each case of accident an Inspector of Machinery has made a detailed report, and the circumstances of every accident have been closely investigated. The majority of accidents have not been due directly to machinery causes, but to careless indifference which creates a false feeling of security. A foreman of works was killed in a shaft-tunnel, a place he had prohibited his workmen from entering. Another man was killed whilst riding on a goods-lift, although there was a notice in large letters posted up prohibiting any one from riding on the lift.

The prevention of such accidents is beyond the control of the Department. Greater sense of appreciation by workmen of the danger associated with the machinery they attend to would materially assist in a reduction of the number of accidents; in fact, this is probably the most helpful means by which an appreciable reduction can be brought about. From the various reports received during the year it appears that many workmen have not the instinct to perceive an open danger as such, and therefore act as if in perfect safety, with the almost inevitable result. Machinery-owners should as far as possible choose men for machinists who are naturally careful. They should be well trained and thoroughly informed of the dangers of working machines they may be in charge of. Not until a machinist has been trained to do the correct thing habitually should he be considered satisfactory.

Guards and other mechanical safety equipment will not prevent all accidents. They can prevent a proportion of them only. The majority can be considerably reduced by the careful attention of the worker to what he is about.

Of the fatal accidents, one was due to the oiling of overhead shafting when in motion, two to adjusting belts by hand while the machinery was in motion, one to entering a shaft-tunnel whilst wearing a loose apron, one to riding on a lift authorized to carry goods only. One unfortunate woman was killed by a 3 h.p. milking-machine. Her clothing became entangled in the belting or fly-wheel. This engine had been installed and in use without the knowledge of the Department and was therefore unprotected.

All of the above accidents were avoidable if reasonable care had been exercised.

Of the non-fatal accidents, 33 were caused by wood-working machines. Of this number, circular saws were responsible for 17 accidents and buzz-planers for 7. Of the 17 circular-saw accidents, 9 were due to the worker's hand slipping on to the saw in front whilst the wood was being pushed through, 3 persons were injured through slipping on the ground or floor, thereby coming in contact while working about saws, one was badly cut through attempting to bring a saw to rest quickly by pressing his hand on the side of it, one was injured through cleaning under the bench whilst the saw was revolving, another being injured by a piece of timber flying off the saw, and in the remaining two cases the actual causes of the accidents are not clear. Here, again, at least 80 per cent. of the accidents were due to carelessness and foolhardy action. It is satisfactory to note that there was only one accident due to a piece of timber flying back off the saw. The special preventative for this class of accident is a fin at the back of the saw. Many workers prefer the tensioning-fin—that is, one held at each end—in lieu of the usual type, which is bolted firmly in position at the lower end only. The Department has recently approved several designs of tensioning-fins which are now being installed. In the case referred to one of these improved fin guards has been fitted, and it is expected there will be few such accidents in future. There is difficulty in protecting workers against accidents caused by the hands of the benchman slipping on to the saw in front when feeding, because the height of saw exposed above the bench cannot be less than the thickness of the timber cut. When handling small timber a push-stick in common use should be used invariably to push the timber through the last few inches. A number of the accidents were due to neglect to use this precaution.

The buzz-planers responsible for the accidents herein referred to were all fitted with circular cutter-blocks. The injuries were not severe, except in one case where four fingers were so badly lacerated that they had to be amputated. In this case the man was attempting to plane a small piece of jarrah by applying hand-pressure immediately over the knife-block, the timber being swept away by the action of the knives the hand fell on the revolving knives with some force and so was badly injured. This is the cause of the greater number of such accidents, and when it happens to one not practised in operating this machine it is the lack of knowledge of its action, while if an expert is caught it is usually the result of foolhardiness.

This is the most severe accident caused by a buzz-planer fitted with a circular cutter-block which has been reported to the Department, and its extent is difficult to understand. These machines even with the latest equipment are very dangerous. The gap in the bed of a circular-head machine is not usually so large as that required for a square cutter-block, and being practically filled up by the circle there is little likelihood of more than the flesh at the tips of the fingers being removed.