

information than is now presented for many parts of the empire. The subject is of the very greatest importance. Sufficient information has been given by the committee to whet the appetite for much more. Plentiful funds should be placed at the disposal of the committee so that its work can be continued in the more exhaustive manner, which must characterize all reports on post-bellum problems if we expect to hold our own with Germany in the war after the war.

Organizations such as the Conjoint Board should make every effort to obtain information from all possible authoritative sources throughout the entire world before attempting to present summaries for public attention. Popular views having been formed on insufficient data, naturally it would be difficult to obtain proper acceptance for subsequent fuller statements based upon more comprehensive studies.

PRECAUTIONS FOR REDUCING ACCIDENTS ON CONSTRUCTION WORK*

By W. J. Lynch

Assistant to Vice-President, Thompson-Starrett Co.

USE only substantial machinery and equipment adapted for the work on which it is used. Machinery and equipment when returned to the contractor's yard from a job should be given a thorough inspection and overhauling, so that it will be in first-class condition when delivered to a new operation.

Under no circumstances should equipment be overloaded; take no unnecessary chances where human life is in danger.

Where wooden derricks, travelers or timber rigging is used, see that all timbers are in good condition and are erected plumb and square, and that all chains and fittings are securely tied or bolted.

Where stiff-leg derricks are used, see that they are properly weighted. On industrial work, where the derrick is to remain in one location for a considerable time unloading materials, small concrete foundations are sometimes provided—bolts set in the concrete being used to hold the derrick.

In very cold weather, unusual care should be exercised not to overload derricks, on account of the action of the cold on the metal parts.

Frequent cleaning of boilers and mechanical equipment serves economy in operation as well as being an important element in accident prevention.

To protect operators from falling materials, provide housing where hoisting engines or motors are exposed.

Crank shafts, gears, and all revolving projections should be encased or other effective protection provided.

Horizontal shafting and hoisting cables should be rail guarded or some danger mark appear in the area in which the shafting or cables are located, to indicate danger to the workmen.

Vertical shafting or cables should be placed in unexposed shafts where possible, but when running through exposed areas should have temporary enclosure for 7 ft. in height, or be rail guarded.

The space adjacent to moving cables, engines, etc., should be kept clear of piles of used lumber, rope, rubbish, etc.

*From a paper read before the Construction Section of the seventh Annual Meeting of the National Safety Congress.

Moving cables should be free from chafing against concrete, tile, steel, or other hard material, producing wear.

Where guy cables turn over edge of steel plates or sharp corners, provide wood or other protection against cutting.

The loads should not be thrown too quickly on the motors of electric hoists. This brings severe strain on the hoisting mechanism and may result in burned-out coils.

Cleaning or repairing should not be done while machinery is in motion.

Blocks and sheaves should be selected for the cables used, to prevent undue wear on the cable.

Steam shovels should be kept on as nearly a level bed as possible, to prevent overturning. Special care should be exercised in lifting loads with locomotive cranes when on inclined tracks or curves.

Steam shovels and locomotive cranes should be kept orderly, and miscellaneous parts kept in their places, to eliminate stumbling or tripping hazard.

Only those actually required should be allowed on steam shovels or cranes, and wherever possible workmen should be kept out of the way of the swing of the loads, the operators being instructed to insist upon this precaution.

See that all chains and cables, including rings and hooks in same, are amply strong, the use of steel cable being recommended. Keep machine fittings and cable well oiled and greased. See that all guy cables are securely fastened by substantial clamps. Plates, shackles, chains, hooks, etc., that show any sign of fracture or are badly bent should receive immediate attention, and if liable to be subjected to heavy strains or heavy loads, should be replaced.

Hooks lifting very heavy loads should have either a safety clamp or be securely lashed, to prevent spreading and dropping of load. When lifting heavy loads, avoid sharp bends on the cable slings, and when lifting steel use wood blocking to prevent slipping and to prevent abrasion of the cable.

See that the shafts of hoisting engines are true, and clutches, brakes and gears engage properly and work freely.

Riding derrick loads or material hoists should, of course, be prohibited.

Material hoists should be guarded with wire or other enclosure on three sides and wood bar at front opening.

Passenger hoists should be provided for workmen, enclosed on three sides and top, with gate enclosure at the opening.

All power saws, planers and jointers should have enclosing guards.

Unless absolutely necessary, workmen should not be permitted to ride on automobile trucks. Many accidents have occurred through falls from overcrowding, hitching on and jumping off trucks in motion.

Men using acetylene torches should use goggles and gloves.

Many accidents occur from the use of defective and worn hand tools. Cracked or insecure handles should be replaced; saws, chisels, etc., should be kept sharp, and hammers and sledges with mashed or fractured heads should be dressed or replaced.

In cutting concrete, wire or other holders should be used to hold the handle of the cold chisel in order to avoid injury when the blow on the head of the cold chisel is misdirected. Tools should not be left lying around to be tripped over or knocked on workmen below.