

Tube cutting, expanding, &c.

For tube cutting and expanding a modern, balanced, power-driven plant should be installed. Plate-shears and multiple drilling-machines are also required in this shop.

(c.) *The Machine and Fitting Shop.*

Shaky roof. Poor transmission and lifting-gear.

The shafting is carried on an old and unstable roof, and a large amount of power is lost in transmission. The lifting-arrangements at the machines can only be regarded as makeshifts. The height of the shop is insufficient for the development of a satisfactory handling scheme. The arrangement and grouping of the machines are bad. The congested state of the shop is a contributing cause of these defects.

Tool-room, &c., unsatisfactory.

The tool-room and tool-room equipment are not what might be expected to be found in a shop professing to turn out accurate work. (This matter is dealt with under heading II.)

Lathes obsolete.

The majority of the older lathes are unsuitable for use with high-speed steel. A few of the lathes might be modified with fairly satisfactory results (this has already been done in one case); the remainder should be replaced by modern machines.

Remodelling of shop recommended.

The Board would also recommend the complete remodelling of the buildings, the lay-out, the power-transmission, and the material-handling arrangements of this shop.

(d.) *The Erecting-shop.*

Overhead travellers.

The overhead travellers are far too slow in action to be made general use of. The same remarks apply to these as to those in the boiler-shop, and similar action should be taken regarding them.

(e.) *The Points and Crossings Shop.*

This shop is well equipped for the work to be done. It is, however, desirable that a level laying-out floor on concrete foundations should be substituted for the pieces of rail at present in use.

(f.) *The Foundry.*

Lifting-appliance faulty.

The lifting-appliance, a single overhead traveller, hand-worked, is an extremely poor one, twelve men being required to deal with the larger ladles.

The Board is informed that an air-lift has been ordered for this traveller, but is of opinion that a modern three-motor electrically driven crane is required. Independent wall cranes below the traveller are also desirable, but the small amount of head-room available will make their introduction difficult.

At present the pig is being broken by hand, and, with the fuel, carried by manual labour up to the charging-platform. It is understood that cupola lifts and a pig-breaker are in hand. These should be completed without delay.

A bolting-down floor and a watertight casting-pit should also be provided.

The position of the rattlers involves a large amount of handling of castings.

(g.) *The Car-shop and Mill.*

More modern machinery required.

More modern woodworking machinery is required at the mill, also a pneumatic shavings-collecting and boiler-feeding system.

In the car-shop a system of lifting-beams, trestles, and transport bogies should be provided for dealing with cars whilst their own bogies are removed for repairs.

(h.) *Wagon-underframe Manufacture.*

New shop required.

Wagon-underframe manufacture is at present carried on in a shed in connection with the boiler-shop. A well-equipped shop-section is required for this class of work and for dealing with car and wagon bogies and undergear generally. Here should be installed a complete multiple drilling plant, with drills capable of being set to template, so that no marking-off of the work is required.

(i.) *Motive Power*

Motive-power arrangements wasteful.

The motive-power arrangements at Addington are wasteful in the extreme. The presence of the many independent overworked boilers and non-condensing steam-engines, together with faulty belt transmission, fully accounts for the enormous fuel-consumption of 3,700 tons per annum for power purposes alone.