

motive being at the north and south ends of the midway respectively.

The buildings, with the exception of the storehouse, oil house and stores platform, are of steel construction with self-supporting steel frames, with concrete foundations and walls up to the windows. The balance of the superstructure masonry is brick, carried up into a parapet wall all around the building, and capped with a concrete coping. The roof drainage is carried down inside the buildings from receiving hoppers in the roof and through running traps to the sewers. All the large buildings are covered with a built-up roofing composed of felt and asphalt covered with gravel. All windows throughout the plant have 1/8-in. thick ribbed glass, and the skylights are glazed with 3/8-in. wire glass. As additional protection against heavy snow loads on the roof, the skylights are carried on steel ribs with rolled copper sheathing to carry the glass. Copper is used

distributed throughout the various buildings with numerous outlets. The piping distribution system is carried up and down the midway from the power house in a tunnel of sufficient size to permit a passage alongside the pipes, and branches to the various buildings are run from this tunnel in tile conduits packed with asbestos sponge. On entering the building, the piping is carried on the trusses and steel work of the shop. Fuel oil is distributed under pressure from the storage tanks to the furnaces in the boiler, locomotive and forge shops, while an accumulator gives the necessary pressure for the operation of the various hydraulic machines.

The shops are protected from fire by an extensive system of yard piping and fire hydrants, with hose houses at convenient spots. The electric travelling cranes throughout the plant are equipped with alternating-current motors, and are operated directly from the 3-

places, and also has valves for steam, water and air, each pit being a completely equipped unit in itself. A wall bracket crane between every alternate column is also provided. Between each pit there is the usual work bench fitted with the necessary equipment.

The next span is a 60-ft. bay containing all the heavier individual motor-driven machine tools where the bulkier and heaviest parts are handled. This is provided for by two 10-ton cranes for the handling of materials.

At the extreme left of this bay the flue shop is located adjoining the boiler shop contained in an extension to the locomotive shop, and which will be later described. The equipment of this shop is thorough, containing the following machines. (The first column refers to the index number on the illustration by which the machine can be located):

112 Chain rumbler with cleaning chain attachment.

138 Cold cutting-off machine.

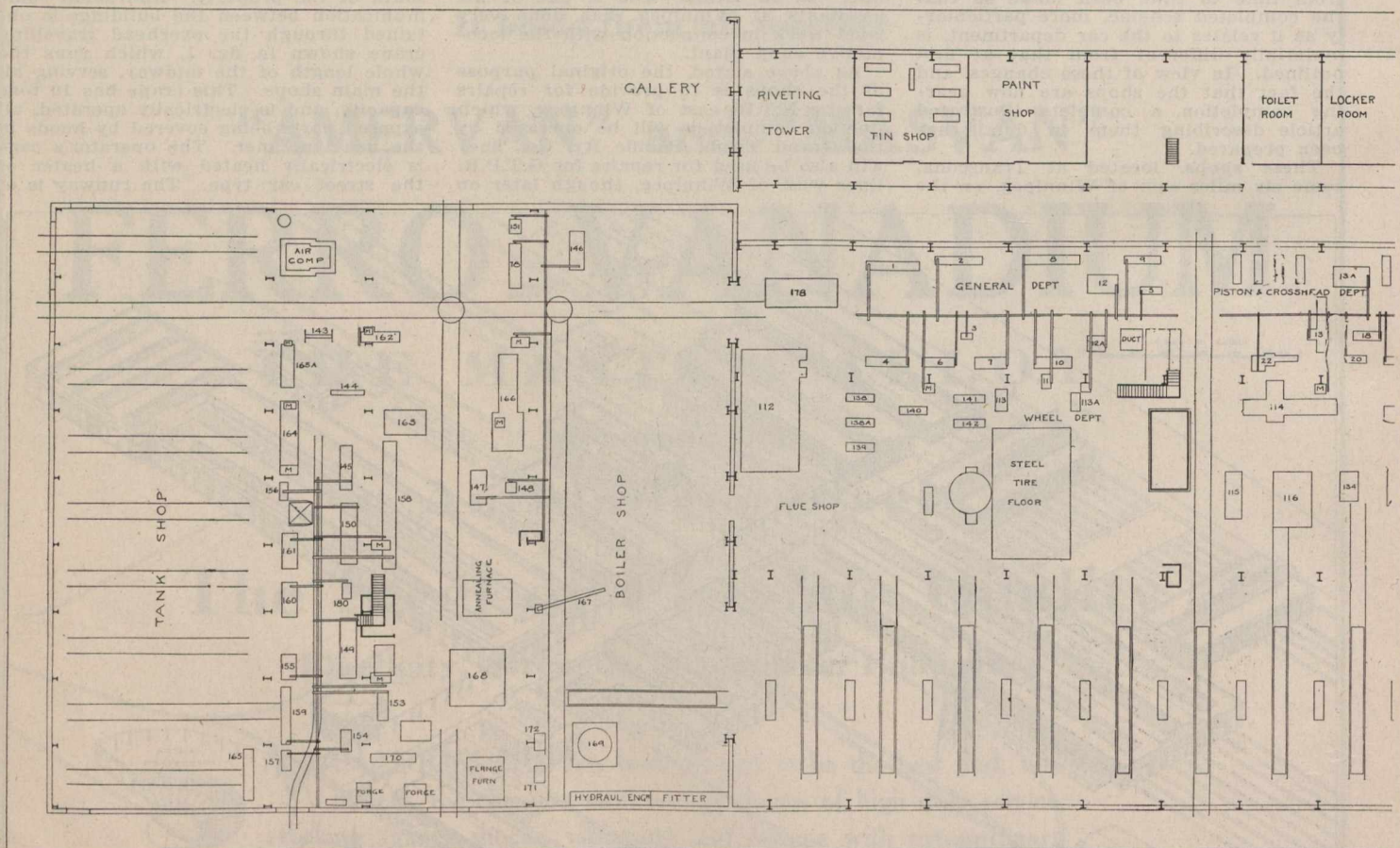


Fig. 2. Plan of Locomotive Machine Shop and Gallery, and

throughout for all flushing gutters and ventilators. The completed shops will have a total floor space of a little over 17 acres.

Mercury arc lights are being used for the principal interior shop illumination, with the lamps and reflectors hung high in the shop. This form of illumination is satisfactory, giving an easy, even light with no sharp shadows. In addition, there will be plug receptacles in all the buildings at frequent intervals for the attachment of lamps on cables for the illumination of boiler interiors and similarly hampered places. Daylight illumination is especially well provided for by ample window areas and wide skylights, giving the maximum of light. The steel-construction makes this possible. To utilize this lighting to the greatest advantage, the interiors of all the shops are painted white, so that the lighting is particularly good.

High and low pressure steam, water, compressed air and drinking water, are

phase circuits from the power house.

#### Locomotive Department.

THE LOCOMOTIVE, MACHINE AND ERECTING Shop, a plan view of which is given in the double-page illustration, fig. 2, is 615 ft. long, containing three bays. The main bay, which is 70 ft. wide, with a height to bottom of truss chord of 50 ft., is the section shown in the lower part of the illustration. It contains 25 locomotive pits. There are two entrances to these pits, at the sixth pit from each end. The locomotive, when entered, is picked up by a 120-ton electric crane which spans the 70-ft. bay, carrying the locomotive to the desired berth. This arrangement has certain advantages over the transfer table, and long track erecting floor layouts. A 10-ton electric crane of similar span used for general work, handles the majority of the parts.

Each pit is replete with plug connections for electric light cables for dark

- 138A Pipe machine.
- 139 Flue expander.
- 140 Flue welder and swedger.
- 141 Hot saw and expander.
- 142 Cut-off machine.
- Staybolt nipper.
- Pneumatic staybolt breaker.

The stationary machines of this lot are in a group drive, with the exception of 112, which has an individual motor. (Motor drive will hereafter be designated by "m.d." unless otherwise noted).

The wheel department, which is next in order in this bay, is provided with all the necessary equipment, including the following machines:

- 113 32-in. Draw-cut shaper with crane.

113A 12-in. Slotter.  
There is also a large steel tire floor centrally located, with a lye vat of sufficient size that driving wheels, side rods, and similar parts may be completely immersed for cleaning off the grease.