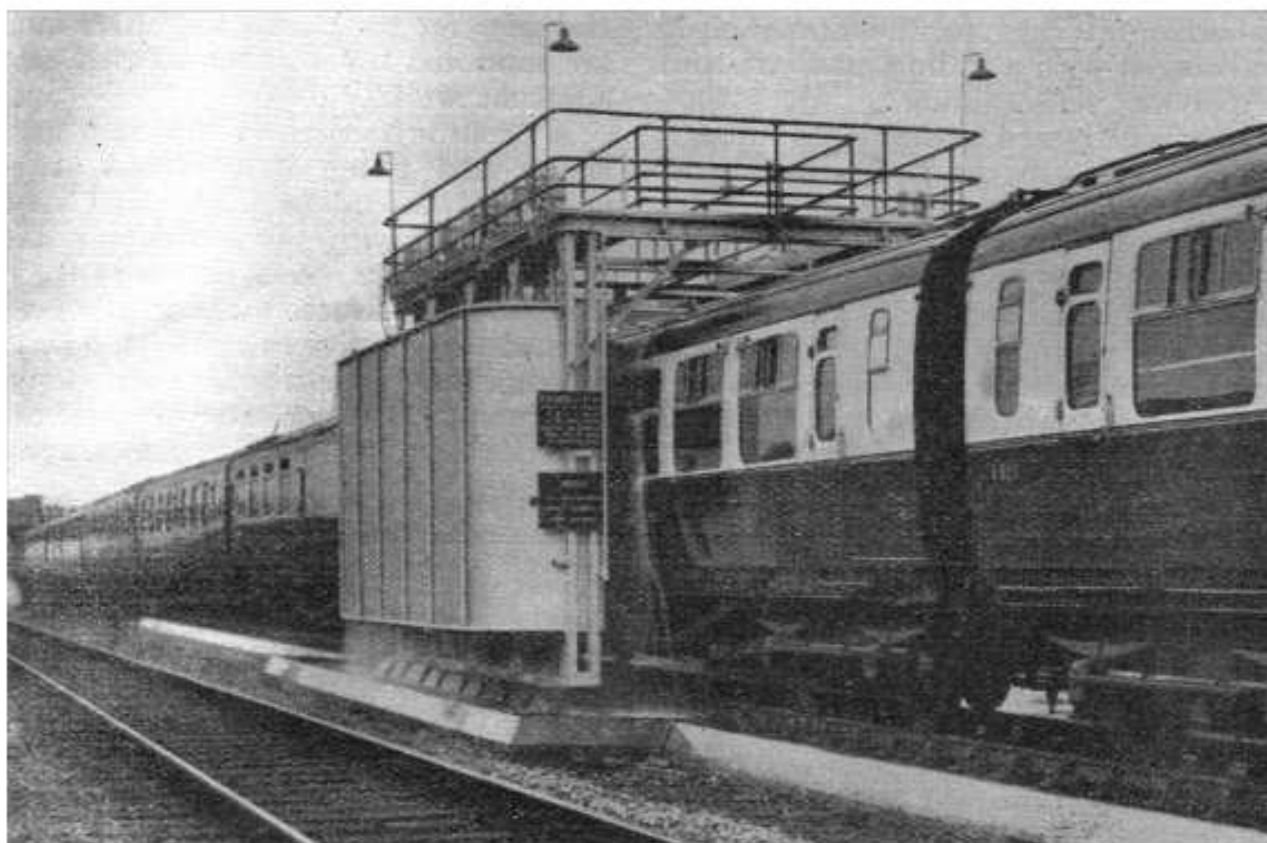


Southern Region Carriage Washing Plant



Train passing through the washing plant at Ramsgate

MECCHANICAL equipment for cleaning the exterior surfaces of coaching stock has been in use in the Southern Region of British Railways and on its predecessor, the Southern Railway, for many years; about ten of these machines had been installed up to 1939. The economies effected resulted in the decision to provide mechanical cleaning facilities at Ramsgate, Bournemouth West, and St. Leonards.

Experience gained with the earlier machines showed that various improvements would bring about considerable further economy, in both consumption of cloths and method of replacements. The working principle, however, remains unaltered. This consists of passing a train at 3 m.p.h. between two rows of revolving shafts, to which a large number of cloth strips are attached. Water under pressure is sprayed on the cloths and also directly on to the coaches to provide a final rinse as they leave the plant.

The machine installed at Ramsgate is fitted with eight vertical shafts, four on each side of the rail track, which is situated in the centre of the plant. Each

carries about 300 cloth strips. The method of fixing has been modified. In previous designs each cloth was held in position by a plate secured by two bolts, necessitating the removal of some hundreds of nuts. In this latest design, cloths are mounted on easily removable carriers.

A further improvement is the provision of radial adjustment to the carriers to take up wear on the cloths; this modification was carried out as a result of trials on the washing plant installed in the London depot at Stewarts Lane with the object of increasing the life of the cloths.

Previous installations have been housed in a roofed-in structure, but this is not necessary with the present design, as the drive to each vertical shaft is by weather-proof electric motors. The framework of the Ramsgate plant is built up from standard rolled steel sections, and carries a weld-mesh steel-floored platform round the top to allow access to the 2-h.p. vertical, geared motors which drive the shafts at 80 r.p.m.

The water is stored in reinforced con-

crete tanks below ground level and is delivered by a vertical direct-coupled, electrically-driven, centrifugal pump at 200 gal./min. As a precaution against freezing, delivery pipes are lagged, and the horizontal runs to the down pipes are arranged with a falling gradient, and are therefore self-draining.

Water is delivered to the cloths through $\frac{1}{8}$ -in. dia. holes in the down pipes, and final rinsing is by means of clean water sprays at each end of the machine fed direct from the mains supply. Water draining from the vehicles is collected in gullies and returned to underground tanks where it is filtered for re-circulation. Periodic removal of the accumulated dirt is carried out by means of a motorised sludge pump.

The plant is controlled from the pump house, from which the shunting operations can be observed. Handwheels regulating the water flow are grouped beneath the observation window. The electrical control gear for the pump and shaft motors are mounted on a panel secured to the adjacent wall.

A push-button emergency stop for the shafts and pump is provided at each corner of the plant, and shaft motors are fitted with individual isolating switches. Tests have shown that, as a temporary measure, washing can be performed with only two shafts operating on each side. The machine was designed and constructed by the department of the Chief Mechanical & Electrical Engineer, Southern Region.