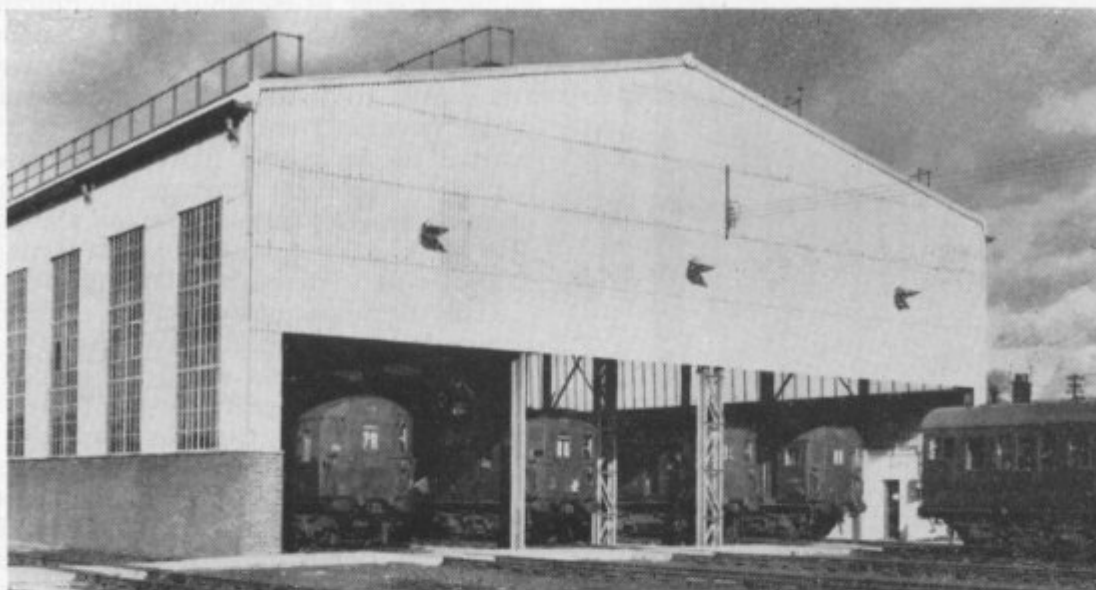


Diesel Train Operation in Hampshire



The new diesel railcar depot at Eastleigh

MORE frequent services and a considerable reduction in journey times compared with the then existing steam schedules were introduced by the Southern Region of British Railways on certain routes in the Hampshire area with the winter timetables of September of last year. These were made possible by the use of ten 500-h.p. two-car diesel-electric train sets described in our December, 1957, issue.

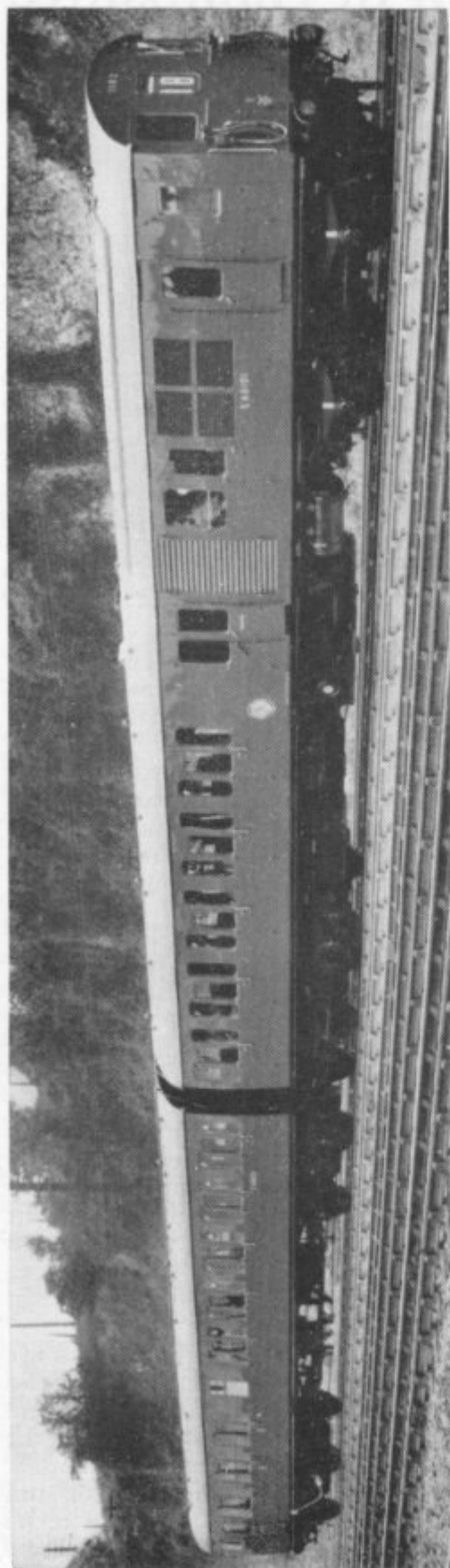
Two months later a further eight two-car sets were placed in service and until recently a total of 18 sets were in service, with 17 sets in use at any one time. The places principally affected were Portsmouth, Southampton, Salisbury and Winchester; the accompanying sketch map shows the area in which diesel operation has been introduced. Recently the total in effective service has been reduced to 16 as mileages of 70,000 to 75,000 per set have been attained and tyre re-turning has become necessary. With schedules as they were until the beginning of the summer timetable, each set was operating a mileage equivalent to almost 120,000 a year. Fuel consumption has averaged 0.4 gal. per train-mile.

So far as the public was concerned, the basis of operation was 20 to 25 per cent. acceleration in timings and more frequent services at regular intervals. From the railway point of view, the basis

was high mileage per set, quick turn-round times at terminals, concentration of all maintenance at Eastleigh, and fuelling points only at Eastleigh and Fratton. There is considerable saving in rolling stock mileage. Previously steam trains of up to ten coaches were run on the Portsmouth-Salisbury line, and those on other lines consisted of three or four coaches.

The results have been impressive. With an average of 14 sets in operation at any one time, an aggregate mileage of 40,107 train-miles a week is accumulated. There was an increase of 29 per cent. in the number of passengers carried during the first six months, to 1,517,550 from 1,176,480 in the corresponding period of the previous year; and there has been a similar increase in the receipts, while operating expenses per mile compared with steam traction have decreased, but the present annual mileage of 2,069,288 is considerably in excess of the previous steam traction figure of 869,804 miles a year.

Traffic has developed through the use of diesel traction and new timetables much faster than was anticipated; and to keep step with the requirements, the number of vehicles is being increased. There has been a rearrangement of staff as a result of the introduction of diesel units; and over the lines covered there has been a reduction of 20 men.



Two-car diesel-electric train set built at Eastleigh for Hampshire services of the Southern Region

In general, the two-car sets are stabled at Eastleigh, but a few sets are berthed out overnight at Salisbury and Fratton. The maintenance depot at Eastleigh is a new building 160 ft. long, with each track able to take a two-car formation under cover. Here, in addition to the normal servicing and light maintenance facilities, there are carriage sidings and cleaning stages; but at Fratton the sets also pass at regular intervals through the existing carriage-washing machine.

Daily examinations of engine, electrical equipment and mechanical parts are made while the sets are being refuelled and replenished at Eastleigh, and also at Fratton. This examination is to a strict routine, as is the more comprehensive weekly one when air and lubrication oil filters are also cleaned. Brake equipment and rigging also is inspected and adjusted; the accelerated timings and comparatively high mileage with frequent stops have resulted in a change of brake blocks being needed almost every week, though those on the trailers have a somewhat longer life than those of the power cars. Modifications have been made to the bogie springing to improve the riding at speed.

One major change has been made to the English Electric four-cylinder oil engine, with 10 in. by 12 in. cylinders; this is the fitting of a larger pressure-charger, whereby the output per engine has been raised from 500 to 600 b.h.p., so that present timings can be maintained when a second trailer is brought into the formation. The oil is thoroughly checked once a month, when the valve gear, lubricating oil flow, bearings and so on are inspected and checked. Every third month the fuel pump timing is also checked, and every sixth month the whole of the engine crankcase is examined internally.

On the basis of the more lengthy experience with similar 500-b.h.p. engines installed in the six-car Hastings trains, the expectation is that the engines will not require intermediate overhaul before 150,000 miles, and a full overhaul until 450,000 miles. For these overhauls the engines will be withdrawn and spare units put in, the withdrawn engine then going to the diesel engine repair shop now being set up at Eastleigh. Special four-wheel wagons are being provided for the transport of engines between the

different diesel depots on the Southern Region and the works. Overhaul of the mechanical and electrical gear is to be based on the practice in force for the extensive multiple-unit 600-volt d.c. electric stock.



Lines in Hampshire now served by diesel trains

On the twin-car trains, and on the identical power equipments of the Hastings six-car sets, there have been few main equipment failures. Most defects have involved the auxiliary electrical, mechanical, and brake equipment. No major modifications have been found necessary, but a number of minor ones have been made or are in hand. A notable one has been the fitting of silencers; also the crankcase breather pipe has been carried to a position just under the radiator fan to reduce internal pressure in the crankcase; and a wax thermostat in the cooling system has replaced the original bi-metal type which had inadequate operating forces.

The popularity of these trains on the Hampshire lines has resulted in the recent decision of the Southern Region to strengthen all sets by the addition of a non-driving trailer coach, thus forming three-car sets of 600-h.p. (up-rated from 500-h.p.), and to build a further four three-car sets of the same design.