

The maintenance figures in the above tabulation exclude indirect charges such as supervision, interest, &c., but include the cost of earthquake and flood-damage restoration.

It will be noticed that expenditure on constructional work was approximately £800,000 greater than in the previous year, and further that the proportion found by local authorities continued to diminish, particularly in respect of construction work, to which the local authorities contributed only 4·5 per cent.

The following statement shows the total expenditure by the Board in each Island on both maintenance and construction for the financial year ended 31st March, 1938, the latter including renewals. The figures take into account administration charges, but exclude interest on highways loans :—

	Expenditure on Maintenance.	Expenditure on Renewals and Construction.	Total Expenditure in each Island.	Percentage of Expenditure in each Island.
	£	£	£	
North Island	750,785	1,436,537	2,187,322	61·30
South Island	378,831	1,001,872	1,380,703	38·70
Totals	1,129,616	2,438,409	3,568,025	100·00

MAINTENANCE.

The total maintenance expenditure by the Board and by local authorities during the financial year 1937–38 amounted to £1,227,555, which is equivalent to an average of £101·2 per mile over the total main highways system of 12,136 miles. During the year immediately preceding, maintenance expenditure by the Board and local authorities amounted to £1,096,754, which was equivalent to an average of £90·5 per mile.

The increase in total expenditure for the year under review is an indication that roading authorities were required to intensify maintenance in order to maintain highways for the greater amount of traffic. In the last report it was stated that additional plant had been obtained or ordered for the Board's use in maintaining highways under its direct control, including the State highways system. This year a similar statement can be made relative to the acquisition of plant by local authorities for the maintenance of highways under their control. Throughout the past year the Board has executed with local bodies several hire-purchase agreements in respect of up-to-date maintenance equipment, and there is no doubt that local bodies generally are devoting more attention to highway and road maintenance. This condition of affairs is particularly pleasing to the Board by reason of the fact that since its inception it has continually emphasized the necessity for regular, systematic, and adequate maintenance, but sometimes without a very successful response.

During the past few years the amount of traffic on main highways has increased tremendously, as may be judged from the fact that the registrations of motor-vehicles were greater than ever before, while the importation of motor-spirits also exceeded previous returns. In consequence additional maintenance operations were required to prevent rapid deterioration of highway surfaces, more especially in the case of gravelled roads. The standard of maintenance throughout the highways system shows an improvement, although this condition is qualified by a few exceptions where the local body is severely handicapped by financial limitations, notwithstanding preferential assistance from the Board. For some time past the Board has been endeavouring to facilitate the maintenance of gravelled highways by providing metal supplies from which requirements could be drawn without payment of royalty charges. In some measure this has contributed towards the higher standard of gravelled surfaces and the strengthening of weak metal crusts. The application of suitable maintenance metal, combined with more frequent gradings, has done much towards producing a better-class road as well as a better class of maintenance. There is still a tendency in some quarters to spread unnecessarily large metal which will not bind under fast-moving motor traffic, but this practice is definitely disappearing in favour of the use of properly graded material, including fines, which produces a good running surface and reasonably withstands wear-and-tear.

In order to assist field officers and local authorities' staffs in the stabilization of metalled surfaces the Board issued for general information a statement prepared by the Highways Engineer relative to the use of fine materials of good cohesive variety. It has not always been sufficiently appreciated that under fast-moving motor traffic fine material is lost from the road surface, and unless this is replaced at appropriate intervals, the wearing-course becomes loosened to the extent that a relatively stable crust is impossible. Consequently the lack of any binding element causes the dispersement of larger fractions, resulting in the eventual loss of the upper wearing-course. In one case the whole of the top course was lost, leaving only a hard, uneven base of spawls. This was satisfactorily remedied by the application of a properly graded wearing-course containing an adequate proportion of fine material of cohesive quality, and an even-running surface was thus restored.

FLOOD DAMAGE.

During the financial year under review a considerable amount of flood damage occurred throughout the main highways system. Generally speaking, it is always to be anticipated that minor damage, arising from seasonal floodings, will occur, and such damage is usually regarded as an accepted contingency in highway maintenance. However, exceptional conditions have been experienced in