

England to report on the ports of Greymouth and Westport. The first factor has been implemented during the past year by the appointment by Government of a Harbour Advisory Committee and as dealt with in the report of the Engineer-Manager, Mr. A. C. Bascand, as follows :—

During the first three months of the year—that is, April, May, and June, 1945—conditions on the bar at the entrance to the port were very unfavourable, noticeably so when compared with the very favourable condition which obtained over the later months at the close of the previous year. For instance, over the last three months to 31st March, 1945, the average of high-water depths on the bar (at which stage laden vessels leave the port), and which depths therefore govern the effective working of the port, such average was 22 ft. 9 in., with the average least low-water depth during the period of 12 ft. 9 in.

As comparison, during the first three months of the year now to be reviewed, however, the average of high-water depths was only 19 ft., with 8 ft. 6 in. only as the average of least low-water depths.

This adverse change in circumstances resulted from a frequency of light freshes in the river, followed by a period of strong south-westerly actuated currents along the coastal foreshore and across the entrance, conditions which invariably result in shoaling on the bar. In June a period of favourable weather permitted intensification of dredging by the suction dredgers “Eileen Ward” and “Rubi Seddon” on the bar area, from which, together ultimately with a strong fresh in the river, the very appreciable improvement to low-water depth on the bar of 15 ft. 6 in. resulted by mid-July, and a return to 22 ft. 9 in. as the average of high-water depths over that month.

During the next few months, influenced mainly by prevalence of northerly weather conditions together with steady dredging, bar depths held satisfactorily, but a turn to south-westerly weather, inducing appreciable easterly sets past the entrance at time of low river flow, resulted in deterioration of depths. Predominately fine south-westerly weather continued over the remainder of the year, which conditions do not favour ready reduction of the bar. By January the depth on the bar had fallen to 19 ft. 0 in. average for the month of high waters, as against 23 ft. 4 in. for August, and with the lowest low-water depth 9 ft. 0 in., as against 15 ft. 6 in. in July.

By the close of the year—i.e., as at 31st March—the low-water depth improved to 12 ft. 0 in., and the average of high waters to 20 ft. 6 in., which latter has still further improved.

The port's two bar suction dredgers, “Eileen Ward” and “Rubi Seddon,” worked all possible time throughout the year, and together lifted just on 520,000 cubic yards of littoral sand from the bar area, as against some 490,000 yards during the previous twelve months.

The dredgers mentioned, in addition, when conditions were not suitable for working on the bar, lifted from the river reach from the entrance to the wharves some 177,700 cubic yards of sand and shingle, and the bucket dredger, “Maui,” lifted just over 88,000 yards of shingle from the berthage area in the port. In all the total lifted by the three dredgers and carried to sea to dump during the year was 785,900 cubic yards, as against 765,000 cubic yards during 1944–45, and a total only slightly exceeded during one year (1940–41) since 1930.

Taken over the year as a result of poorer depths during the majority of months the mean of high-water depths was rather less than over the previous year, being 20 ft. 8 in., as against 21 ft. 4 in. Further comparisons are included in the following tabulation, together with corresponding statement of the number of days in the respective comparative years on which various depths of water obtained on the bar :—

NUMBER OF DAYS ON WHICH DEPTH OBTAINED ON THE BAR AT HIGH WATER

Depth	1917.	1924.	1927.	1931.	1939.	1942.	1944.	1945.	1946.
14' to 16'	..	..	..	..	..	..	1	..	2
16' to 18'	..	..	..	25	2	1	39	23	35
18' to 20'	..	4	..	132	88	33	96	69	124
20' to 22'	..	110	26	165	149	181	150	142	117
22' to 24'	22	162	112	43	115	143	75	87	62
24' to 26'	143	86	125	..	11	7	5	43	24
26' to 28'	137	4	79	..	..	..	..	1	1
Over 28'	63	..	32	..	..	..	..	..	..
Mean for year	25' 3"	23' 2"	24' 10"	24' 2"	21' 3"	21' 9"	20' 8"	21' 4"	20' 8"

NOTES.—In the foregoing tabulation the years quoted are as at 31st March. In the history of the port 1917 was the year of best depth conditions. This was during the year following completion of the last breakwaters extension plus a period of very intensive dredging.

The good return of working depths for 1927 was the result of many floods in the river that year, topped by the exceptionally great flood of 5th November, 1926.

The figures for 1931, except for 1934 (depression circumstances), represent the poorest working depth conditions for over forty years.