

Study of Ship's Track and Motions at Port Taranaki

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ABSTRACT This paper describes a study carried out at Port Taranaki, New Plymouth, New Zealand to determine ship's track and motions at the port entrance. The results of the study being used to establish the extent (plan area) and optimum depth of proposed capital dredging works. The time lapse photographic technique, incorporating reference levels and bearings in each frame, used to record vessels entering and leaving the port is described. Maximum increases in ship's draft due to sea conditions are given.

1. INTRODUCTION

Port Taranaki, located in New Plymouth on the West Coast, North Island, New Zealand (Fig.1) is undergoing major development to handle, by 1987 a threefold increase in trade brought about by the utilization of the Maui (off shore) and Kapuni gas and oil fields.

As part of the port development, capital dredging including the port entrance is required to allow for deeper draft vessels (up to 11.0m) and a greater tidal 'window' for arriving and departing ships. The present dredged depth is 9.0 - 10m below chart datum.

This paper describes the work carried out to determine:-

(i) the extent (plan area) of port entrance to be dredged by plotting the tracks taken by vessels at the entrance.

(ii) the optimum increase in dredge depth for vessels using the port by measuring the magnitude of ship's motions (as they effect draft) caused by wave action.

Due to budgetary restraints the study had to be carried out at minimal cost.

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