

318m CONTAINERSHIP STUDY

Introduction

This analysis was carried out in November 2019 by Northport Ltd using their bridge simulator onsite at the port facility. The purpose of this study is to understand the potential size limitations for container ships using Northport in the future. For this study, the existing Channel was used with the present 2019 berth configuration.

Design Ship

The design ship for this study was developed by Northport and based on a 7000 TEU Post Panamax containership. The design of the ship was based on the Pilot Card of the Regina Maersk and sea trials data available on Post Panamax class containerships.

Regina has been modeled at a 14 meter draft. She is in full loaded condition.

The simulated design ship was tested in the Marsden simulation area (Marsden 1B) using the latest tidal data provided by Metocean.

Tugs

Bream Bay 69T

Takahiwai 50T

RT85 Rotor Tug 85T

Simulations

Run Number	Maneuver	Tide	Wind	BT Used	Tug Power Max	Comment	Pilot
001	Arrival SST Number 3	Flood -2 hrs	SW 15	Yes	85	Speed excessive. Swung ok	GW
002	Arrival SST Number 3	Flood	SW15	no	85	Swung ok	GW
003	Arrival SST Number 3	Flood Full	SW 25	yes	70	Tidal streams wrong. Not valid	AB
004	Arrival PST Number 3	Full Ebb	NE 25	yes	85	Difficulty near Number 8 buoy swinging into current.	AB
005	Arrival SST Number 3	Flood Full	SW 25	yes	85	Swung OK	AB

006	Departure Number 3	nil	SW 25	No	No	Departed past Home Point ok.	AB
007	Arrival SST Number 3	Flood Full	SW 20	yes	85	Ship transited channel and swung ok off berth	TG
008	Arrival SST Number 1	Flood Full	SW 20	yes	85	Ship transited channel and swung off berth. Achieved ok but considered difficult.	KB
009	Arrival PST Number 2	Ebb + 1 hrs	N 15	yes	85	Handled quite well. No issue. Will have to consider DUKC with this	KB
010	Arrival PST Number 3	Ebb Full	SW 25	yes	85	Significant tidal effect but managed ok. Ship transit fast and tugs would have difficulty keeping pace	KB
011	Arrival SST	Full Flood	SW25	yes	85	Handling ok but needed for helm similar to Aframax	RO

Recommendations based on the existing analysis

Further simulations are required to complete this analysis however the initial results look favorable. Departure simulations must be undertaken with full pilot input, but preliminary work indicates departures are feasible to winds of 25 knots.

More analysis is required of the tidal streams to confirm the Metocean data.