

THE TUG AORAKI

Vessel Description and Specification

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MARINE FOCUS
New Zealand



Tug Aoraki



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1. Vessel Specification

BUILDER	Bengbu Shenzhou Machinery Co.Ltd, Anhui PR China
YEAR LAUNCHED	May 2008
LR VESSEL ID	9494125
LOA (m)	27.90 m
REGISTERED LENGTH (m)	27.70 m
BMAX (m)	9.82 m
DEPTH (m)	
GROSS TONNAGE	333 t
REG TONNAGE	99 t
CALL SIGN	ZMOA
IMO	9494125
MNZ NUMBER	133106
FLAG	NEW ZEALAND
HOME PORT	TIMARU
CLASSIFICATION	LR 100 A1 Tug *IWS LMC
SERVICE SPEED	
MAX CREW	10
MAIN ENGINE CAPACITY	2 x 1323kw
BOLLARD PULL	42.8 tonne

2. Classification and Survey

- a. The Aoraki is in Class with Lloyds 100 A1 *IWS LMC - Class Cert to expire 9th Sept 2023. There are no records of defects, deficiencies or Conditions of Class noted.
- b. The Aoraki is managed under Maritime NZ MOSS system MTOC Cert No MTOC – 221901 expiry 11th Jan 2027.
- c. All certificates and ships documents were available for inspection and found to be satisfactory.
- d. The vessel is currently operating as an inshore harbour tug and the certified operating limits reduced accordingly. The fast rescue boat and other equipment required for off shore operation have been removed for storage. This equipment can be readily reinstated and the operating limits reinstated as agreed with Class.

3. Engines and Machinery

Main Engines

Main Engine Maker: NIIGATA Engineering Co.
Model: 6L25HX
Output: 1323 Kw @ 750 rpm
No of Cylinders: 6
Bore: 250 mm
Stroke: 350 mm
Engine Hours as of Jan 2019 are Port – 8308, Stbd - 8308

Z PELLER Equipment

Make: NIIGATA Engineering Co.
Model: ZP-21
Input shaft rpm: 750 rpm
Propeller rpm: 330 rpm
Reduction: 2.272: 1
Slipping Control Range: 50 – 330 rpm at engine idling speed (400 rpm)
Propeller: 4 Blade, Fixed Pitch, Kaplan type with Kort Nozzle
Diameter and Pitch: 2000 mm and 1840 mm

Main Generator Plants:

Engines: 2 X VOLVO PENTA, D7A T HE, Marine Diesels, 116 kW @ 1500 rpm
Engine hours as of Jan 2019 are: Port – 8051, Stbd – 8047.
Generator: 2 X Montenrs Leroy Somer, 135 KVA, 415 V Ac, @ 1500 rpm

Main Air compressor:

2 X Tanabe compressors, LHC-33, 22 cu.m /hr

Air Reservoirs: 2 X 200 L at 30 kg / cm²

Heat exchangers are provided for:

Main Engine Cooling Water X 2

Main Engine Lub Oil X 2

Z Peller Hydraulic Oil x 2

Z Peller lub Oil x 2

Hydraulic Power pack Oil x 1

Generator Fresh Water x 2

Fire Fighting Pump and Monitor:

Pump: Kumera, 1455cu.m/hr @ 1800 rpm

Monitor: Fire Fighting systems ltd, FFS 600, Length / Height = 100 m / 45 m

Capacity: Water / Foam = 600/ 150 cu.m /hr

Oily Water Separator,

Recovered Energy Inc., BOSS 2T/107, IMO approved.

Sewage Treatment plant,

Taiko Kikai Industries Co. Ltd., Japan, 8 people, SBT – 15.

Tanks

Total Fuel Oil capacity (7 tanks) = 174.3 cu.m

Lub Oil storage Capacity = 4.3 cu.m

Hydraulic Oil storage Capacity = 2.1 cu.m

Foam Solution tank capacity = 10.6 cu.m

Dispersant tank capacity = 10.6 cu.m

Dirty oil tank capacity = 2.1 cu.m

Emergency Generators/Pump

One Portable Emergency Generator for recharging main generator starting batteries, Hand start.

One Portable Emergency Fire pump, Hand start

Navigation and Communication Equipment

Marine Radar	JRC	JMA 5110	
Marine Radar System LCD Monitor	JRC	NWZ-164	LB48289
GPS Navigator	Furuno	GP 1504414-4604	
Navtex Receiver	McMurdo	Nav7	3509501017
VHF/FM Portable No.1 Icom	IC-M72	202173	
VHF/FM Portable No.2 Icom	IC-M72	202174	
VHF Marine Transceiver			
GPS Gyro Compass	Furuno	FM-220A	
Magnetic Reflector Compass	Saura	MR-150	R3272
Autopilot	Simrad	AP50	20214045
Echo Sounder Furinoo	FE-700	2232-5463	
Wind/Weather Station	Young	6206	WT15944
Chart Plotters	Seiwa	Barramunde Plus	7070877
EPIRB McMurdo	Smartfind	406 GPS	200-95545
SART Transponder	McMurdo	SH Rescue SART	SH Rescue SART
		SH/07171451	
GSM Telephone	Sailor Iridium	SC 4150	7885403
VHF GMDSS	Furuno	FM-88005	3545-7181
VHF-DSC Radiotelephone	Sailor	RT5022	80216747
SSB Radio	Furuno	FS-2570C	7592
Speed Log	Furuno	DS-80	4862
Gyro Compass	Simrad	RGC50M7349	
AIS	Furuno	FA-1502	9356
Inmarsat-C	Furuno	Feldcom 15	3533-9129
Telex	Furuno	IB-583	4372
VHF Radiotelephone			
Portable Light Signal Lamp			
Electric Control Searchlight			
Manual Control Searchlight	Sunlux	300C	

Deck equipment

Forward Towing Winch	Marine Equipment	ME 3TWL10T	ME 0712 -38
Forward Towing Winch	Hydraulic Motor Staffa/ KPM	HME080/S/90/45/S03	102325
Towing Winch Aft	Marine Equipment	ME 45THTW	ME070823
Towing Winch Aft	Hydraulic Motor	Staffa/ KPM	
		HMC200/S/188/60/S0495859	
Towing Winch Control System Ford and Aft	Marine Equipment	EAW415/50-3B3	
Hydraulic Power Unit	Marine Equipment	ABS	HPU 07-06-21
Palfinger Deck Crane - extension.	PK 12000 SWL	1910kg @6.1m SWL	6000kgs at min

Vessel Condition – General comments

1. Hull

- a. The vessel was dry-docked in September 2018 and easily passed its Lloyds 10 year survey. Prospective clients are encouraged to seek confirmation of the vessel's condition from the New Zealand Lloyds Head Surveyor.
- b. The hull is coated with Altex coatings and is in very good conditions. Anodes were replaced during the dry-docking. Sea chests are in good condition and all valves were surveyed.
- c. The upper decks are in very good order as are their coatings.
- d. The topsides paint coating was also in good condition.
- e. Seals on upper deck doors are in good condition and sealing clips are well maintained and all functional.
- f. Upper deck windows appear to be well sealed with no sign of leaks.
- g. The forepeak locker is in good condition.
- h. Internal pipework appears to be in good condition.
- i. Tanks are in good condition.

2. Engineering spaces and machinery

- a. The engineering spaces consist of the engine room and propulsion equipment room, immediately aft. The propulsion equipment room is separated from the engine room by a watertight door. This watertight door is fitted with an alarm. The engine room is accessed by a stairway from the main accommodation deck.
- b. The engine room is spacious, well laid out and immaculately clean. There is easy access to main machinery for operation and maintenance.
- c. Inspection while the vessel was running showed NO alarm conditions, oil leaks or any other defect conditions.
- d. Engine room bilges were dry and appeared to be in good condition.
- e. The propulsion room has good access to the internal components of the azimuth drive units.
- f. Machinery spaces are fitted with a CO2 fire extinguishing system, which is in date. The activation point for the CO2 system is located on the port working deck, forward of the aft winch. The starter for the CO2 room exhaust fan is located inside the compartment.
- g. The machinery spaces are unmanned during normal operations. A local control station is located centrally in the engine room. The UMS system allows automatic shutdown of the main engines in

the event of low lube oil pressure or engine overspeed. There are cameras located in the engine room, with a monitor in the wheelhouse.

- h. The main propulsion equipment consists of two Niigata 6L25HX 4 stroke diesel engines, each producing 1323 Kw at 750 rpm. Engine starting is by compressed air. Each engine has approximately 7300 running hours. The engines are well maintained and run efficiently with no fumes, smoke or leaks evident.
- i. Each engine drives a Niigata ZP-21 azimuth thrust units, fitted with fixed pitch propellers through a 2.727:1 reduction box. Speed control is via direct mechanical drive fitted with a hydraulic slipping clutch, giving a speed range between 50 and 330 rpm. Each drive unit is electronically controlled from the bridge and also has a local control in the engine room. There are no signs of leakage from the hoses and pipes on the units.
- j. The vessel has two Volvo Penta diesel driven generators. Both generators have run for just over 7100 operating hours and operation of the generators appears to be well balanced between machines. While each generator is sufficient to meet the vessels electrical demands once motors are started. Both generators are normally operated at the same time. The main switchboard is located between the generators.
- k. The vessel has an international shore power connection and usually runs on shore power when alongside.
- l. The emergency generator is a small portable unit, located at the top of the engine room access stairway. This unit provides charging to the starting batteries for the main generators.
- m. Two Tanabe compressors, LHC-33, 22 cu.m /hr provide starting air for the main engines. These compressors feed two 300 L reservoirs at 30 bar. Both reservoir pressure relief valves are tested, tagged and in date.
- n. Cooling for the main engines cooling water and lube oil is by keel coolers.
- o. Cooling for the main hydraulic power pack, z-peller lube oil and hydraulic oil is by locally fitted tube and shell coolers.
- p. A Kumera 1455cu.m/hr @ 1800 rpm fire pump is powered from the forward end of the port main engine. This pump feeds two monitors located on the bridge top.
- q. In addition, a portable engine driven fire pump is located on the upper deck, adjacent to the aft winch.
- r. The vessel is fitted with a Taiko Kikai Industries SBT – 15 sewage treatment plant, with a capacity of 8 persons. This plant is operated on a regular basis when the crew are living onboard.
- s. The vessel is fitted with Recovered Energy Inc., BOSS 2T/107, IMO approved oily water separator. This unit is fully operational and effective.
- t. The vessel has two hydraulic pumps providing drive to the forward and aft winches. These pumps are located in the engine room and have recently had their flexible hoses replaced.

- u. The vessels batteries are stowed on the bridge top inside two watertight containers.

3. Bridge

- a. The wheelhouse is set up with control stations forward and aft. With excellent visibility for operations over the bow and stern
- b. There is a comprehensive set of modern navigation and communication equipment all stated to be fully operational and to Class requirements.

4. Accommodation

- a. The internal spaces are fully air conditioned. A new domestic air conditioning unit was installed in early 2018. The condenser for the unit is located on the bridge top.
- b. Hot and cold water is supplied by pumps in the engine room. Hot water is supplied by a 4.5 kW electrical cylinder, of approximately 100L capacity. Crew report that both hot and cold water pressure is good throughout the vessel.
- c. The vessel has good accommodation with berths for 10 in a mix of single and shared cabins.
- d. The vessel is fitted with ensuite facilities in the Captain and Engineers cabins. The other cabins share two showers and one toilet. Toilet flushing valves were replaced in 2017.

The vessel has a well-appointed and equipped modern galley and mess-room. These and the common bathrooms and laundry areas are well keep and very clean and tidy.

5. Deck equipment

- a. All equipment was in good working condition and well maintained

6. Life Saving equipment

- a. The vessel has a full set of life saving equipment as per Class and Maritime NZ requirements. and the list attached









