

Field Survey

Vessel:	M.V. "Maunalei"	Date:	August 18, 2022
Gross Tons:	25,324	IMO No.:	9273686
Flag:	USA	Port:	Honolulu
Owner:	Bank of America Leasing	Operator:	Matson Navigation Co

We, the undersigned, have this date held survey on the M.V. "Maunalei" while on dry dock at Vigor Shipyard, Portland, Oregon, in order to ascertain and agree upon, or as noted otherwise, the cause, the nature and extent, and the recommended repair of damage as a result of a fractures in two of the CPP propeller blades.

FOUND

1. No.2 CPP propeller blade with fracture at the hub, in way of the 2-1 and 2-2 bolt recess and between the 2-1 bolt recess and the blade edge. (blade counted anti-clockwise looking forward)
2. No. 4 CPP propeller blade with fracture at the hub, in way of the leading edge, extending through the bolts, approaching the trailing edge

RECOMMENDED

1. Remove the propeller blade to an authorized repair facility for further evaluation. If possible, grind and build up the area affected by the fracture, as a temporary repair.

A new blade will likely be required to be installed at a future date.
2. Renew the propeller blade with Owner provided spare. The spare will require replacement.

NOTES

- (A.) Dry-docking is required to effect the foregoing repairs.
- (B.) Necessary tug assistance to be provided to assist vessel to and from repair facility.
- (C.) Necessary tug assistance to be provided to assist vessel on and off dry dock.
- (D.) Necessary services of riggers to be provided to handle lines and gangway on and off dry dock or upon arrival and departure of repair facility.
- (E.) Necessary cleaning and gas freeing to be carried out prior to commencement of the foregoing repairs.
- (F.) Necessary gas chemist's certificate to be provided prior to commencement of the foregoing repairs.

- (G.) Necessary transportation of men and materials to be provided to effect the foregoing repairs.
- (H.) Necessary fire watch to be provided during all "hot work" repairs.
- (I.) The following dry dock services to be provided, including hook-up and disconnection as applicable:
 - Fire line
 - Electricity
 - Circulating water
 - Steam
 - Garbage removal
 - Telephone
 - Gangway
- (J.) Necessary services of crane to be provided to effect the foregoing repairs.
- (K.) Necessary temporary lighting and ventilation to be provided to effect the foregoing repairs.
- (L.) Necessary staging to be erected to effect the foregoing repairs and upon completion, dismantled and removed.
- (M.) Necessary removals to effect the foregoing repairs to be replaced in good order.
- (N.) Necessary testing to be carried out to the satisfaction of all interested parties.
- (O.) Necessary recoating to be carried out in way of all new and disturbed work.
- (P.) Necessary services of manufacturer's representative to be provided to supervise the foregoing repairs.
- (Q.) Scrap credit allowance to be considered.

SURVEYOR'S NOTES:

- 1) The vessel was drydocked at Vigor Shipyard in Portland, OR in Dry-dock No.6 on August 17 and subsequent dates
- 2) Initially the CPP oil leakage was considered to be from a blade seal but on completion of a dive survey when alongside Vigor Shipyard on August 15, 2022 a fracture was found in the blade root of blade No.4
- 3) On inspection of the propeller on the drydocking of the vessel, a fracture was also found in blade No.2 (Blade No.2 being the top vertical blade and No.4 being counted in an anti-clockwise direction looking forward)
- 4) The CPP system is a MAN design and had been installed in September/October 2020 at Nantong Shipyard, China. It is a five bladed design which is considered a "Mark 5" design. (Type: MAN P-21400)

- 5) Due to a loss off CPP oil, manufacturer recommended filling CPP unit with fresh water. This will require flushing of entire system, including the stern tube, prior to replenishment with oil.
- 6) Due to concerns with stern tube and CPP it was necessary to stop the main engine some 241 nautical miles from the Columbia River sea buoy. The Tug " Samantha S" towed the ship from there to Vigor Shipyard in Portland, OR for repairs.
- 7) On entry into the Port of Anchorage and up the Columbia River to Portland, escort vessels and pollution response vessels were required by the regulatory bodies.
- 8) Temporary repairs will be carried out to Blade No.2 at Sheffield Marine Propeller Inc. in Portland, OR. These repairs will be carried out as per the MAN repair procedure.
- 9) Operators have ordered two new propeller blades from MAN. Lead time is a minimum of eight weeks.
- 10) All other blades (3 of) are being removed and non-destructively tested for any fractures.
- 11) The prime cause of the fractures in the propeller blades is still under investigation by interested parties.

SURVEY MADE WITHOUT PREJUDICE

ATTENDING

Dale Johnston, Port Engineer

[REDACTED]

Romen Cross

[REDACTED]

David Tantrum

[REDACTED]

REPRESENTING

Matson Navigation Company

ABL Group, representing Owners
Underwriters

Martin & Ottaway, representing Matson
Navigation Company