

LOS ANGELES/LONG BEACH HARBOR SAFETY COMMITTEE

BOLLARD PULL REPORT

Location _____ Date _____

Vessel Name _____
 Official Number _____
 Port Registry _____
 Year Built _____
 Classification _____

VESSEL PROFILE

Hull

Machinery

Main Engines

Length (overall) _____ ft.
 Breadth (overguards) _____ ft.
 Draft A _____ ft. _____ in. (fwd)
 _____ ft. _____ in. (aft)
 Trim _____ ft. _____ in.
 Gross Tonnage _____

Number B _____
 Mfg/Model _____
 Rated horsepower _____ BHP @ _____ RPM
 Cumulative HP _____ BHP

Reduction Gear

Mfg/Model _____
 Ratio _____:1

PROPULSION

Conventional

Tractor-Cycloidal/Z-Drive (circle one)

Number propellers D _____	Mfg/Model _____
Diameter _____ in.	Drive location Fwd/Amidships/Aft (circle one)
Pitch _____ in.	Number blades D _____ (each drive)
Number blades _____	Blade length _____ in. (Cycloidal)
Composition _____	Pitch Dip _____ in. (Cycloidal)
Open/Kort (circle one)	Blade diameter _____ in. (Z-Drive)
	Pitch _____ in. (Z-Drive)

TEST EQUIPMENT/CONDITIONS

General

Strain Cell I

Depth at MLLW _____ ft. Manufacturer _____
 Tide (+/-) _____ ft. Model/Type _____
 Available water _____ ft. E Date Calibrated _____
 Current _____ kts. F
 Wind Direction _____
 Wind velocity _____ kts. G **Recording Device J**
 Ambient Temp. _____ °F Manufacturer _____
 Length Towline _____ ft. H Model/Type _____

Comment [MD1]:

TEST RESULTS

		<u>AHEAD (Towing)</u>		<u>ASTERN (Backing)</u>	
Time:	Start	_____	_____	_____	_____
	Finish	_____	_____	_____	_____
	Duration (minutes)	_____	_____	_____	_____
Vessel Heading: (Magnetic)	Start	_____	_____	_____	_____
	Finish	_____	_____	_____	_____
	Variance	_____	_____	_____	_____
Engine RPM:	Maximum	_____	_____	_____	_____
Shaft RPM:	Maximum	_____	_____	_____	_____
Stack Temperature: (Fahrenheit)	Start	_____	_____	_____	_____
	Finish	_____	_____	_____	_____
	Variance	_____	_____	_____	_____
		<u>Pounds</u>	<u>(Short Tons)</u>	<u>(Pounds)</u>	<u>(Short Tons)</u>
Strain Cell Reading:	Maximum	_____	_____	_____	_____
	Minimum	_____	_____	_____	_____
	Certified ₁	_____	_____	_____	_____

- I. The figure "certified" as the vessel's bollard pull capacity shall be the average of the forces recorded (without any significant tendency of decline) for a period of not less than fifteen (15) minutes while maintaining a fixed reading with the engine(s) operating at the manufacturer's maximum recommended continuous output. This testing and certification will be carried out every three (3) years.

Should it not be possible to comply with the above certification or with one or more of the following recommendations, a notation of this fact should be made in the Remarks Section.

1. The measurement shall be taken with the escort tug's trim and/or displacement corresponding to applicable loadline requirements or letter of stability.
2. Auxiliary equipment (such as pumps and generators) which is driven from the main engine(s) or propeller shaft(s) in normal operation of the escort tug shall be connected during the measurement process.
3. All bollard pull measurements shall be derived solely on the basis of the escort tug's capabilities. No outside assistance shall be allowed.
4. The propeller(s) blades fitted during the measurement shall be the same as those used when the escort tug is in normal operation.
5. Water Depth shall be a minimum of 45 feet.
6. Water current shall not exceed 1.0 knot.
7. Wind velocity shall not exceed 10 knots.
 - A. Measurements of water current and wind velocity shall be provided to the classification society surveyor by the escort tug owner's representative.
1. Towline length shall be a minimum of 300 feet.
2. The strain cell used for the measurements shall have been calibrated within the past 12 months. The classification surveyor shall verify this fact. The accuracy of the strain cell shall be $\pm 2\%$ within a temperature range of -40° and $+104^{\circ}$ F.
3. Instruments providing both a continuous read-out and the bollard pull graphically as a function of the time, shall be connected to the strain cell.
4. The surveyor for the classification society shall:
 - A. Be aboard the escort tug during the measurement process to verify that the bollard pull report is correct.
 - B. Determine the escort tug's static bollard pull capacity by averaging the forces recorded (without any significant tendency of decline) for a period of at least 15 minutes while maintaining a fixed reading with the engine(s) operating at the manufacturer's recommended continuous output.
 - C. Sign the completed "BOLLARD PULL REPORT" of the Los Angeles/Long Beach Harbor Safety Committee.
 - D. Sign and provide a BOLLARD PULL CERTIFICATE.

Remarks:

Class Surveyor 10

Captain or Owner's Representative