

CALIFORNIA AIR RESOURCES BOARD SHIP SURVEY

Part II. SHIP AND ENGINE INFORMATION

(Please complete one form per vessel that visited California in 2006)

Confidential

SHIP INFORMATION

Vessel Name: _____	Lloyds/IMO #: _____	Country: _____	Flag: _____	Date Built: _____
Vessel Type: _____	Ship Electrical Power: _____	Volts _____	Hertz (Hz) _____	Phase _____
Gross Tonnage (GT): _____	Net Tonnage (NT): _____	Deadweight Tonnage (DWT): _____	metric tons	
Average Daily Fuel Consumption at Normal Cruise Speed at Sea: _____		metric tons		

Direct Drive Main Engine/s (Note: For diesel-electric/generator-set engines on cruise ships, etc. please list under "auxiliary engines" below)

Number of main engines: _____	Engine Type: <input type="checkbox"/> diesel piston <input type="checkbox"/> gas turbine <input type="checkbox"/> steam turbine	If diesel engine, type? <input type="checkbox"/> two stroke <input type="checkbox"/> four stroke
Make: _____	Date Built: _____	
Model: _____	Rated Power at MCR: _____	<input type="checkbox"/> kW <input type="checkbox"/> hp RPM at MCR: _____
Fuel Used #1: <input type="checkbox"/> Residual <input type="checkbox"/> Distillate _____ %S	Fuel Used #2: <input type="checkbox"/> Residual <input type="checkbox"/> Distillate _____ %S	
Average cruise power at sea: _____	<input type="checkbox"/> kW <input type="checkbox"/> hp	Average cruise speed at sea: _____ Knots
Please describe any engine modifications completed to either improve fuel efficiency or reduce emissions (e.g., slide valves): _____		

Auxiliary Engines (and all diesel-electric engines, whether for ship propulsion or on-board power). Exclude emergency/standby engines.

	Engine #1		Engine #2		Engine #3		Engine #4		Engine #5		Engine #6	
Make:												
Model:												
Date Built:												
Rated Power at MCR:	<input type="checkbox"/> kW <input type="checkbox"/> hp											
Engine Type:	<input type="checkbox"/> Turbine <input type="checkbox"/> Diesel Piston <input type="checkbox"/> 4 stroke <input type="checkbox"/> 2 stroke		<input type="checkbox"/> Turbine <input type="checkbox"/> Diesel Piston <input type="checkbox"/> 4 stroke <input type="checkbox"/> 2 stroke		<input type="checkbox"/> Turbine <input type="checkbox"/> Diesel Piston <input type="checkbox"/> 4 stroke <input type="checkbox"/> 2 stroke		<input type="checkbox"/> Turbine <input type="checkbox"/> Diesel Piston <input type="checkbox"/> 4 stroke <input type="checkbox"/> 2 stroke		<input type="checkbox"/> Turbine <input type="checkbox"/> Diesel Piston <input type="checkbox"/> 4 stroke <input type="checkbox"/> 2 stroke		<input type="checkbox"/> Turbine <input type="checkbox"/> Diesel Piston <input type="checkbox"/> 4 stroke <input type="checkbox"/> 2 stroke	
Fuel Type used within 24 nm of CA baseline:	<input type="checkbox"/> MGO	%S										
	<input type="checkbox"/> MDO	%S										
Average total ship power generated from engines #1-6 above	At Sea:				<input type="checkbox"/> kW <input type="checkbox"/> hp		Maneuvering:				<input type="checkbox"/> kW <input type="checkbox"/> hp	
	Hotelling:										<input type="checkbox"/> kW <input type="checkbox"/> hp	

Auxiliary Engine QUESTIONS:

Did you make vessel modifications to comply with the California Auxiliary Engine Fuel Regulation? (California Health and Safety Code, sections 43013, 43018, and 39666; title 13, California Code of Regulations (CCR), section 2299.1; title 17, CCR, section 93118)

Yes No If Yes, what modifications did you make?

Date modifications completed:

Cost of modifications: \$

Where were the modifications performed?

Main Engine QUESTIONS:

Would requiring low sulfur MGO use in main engines while operating out to **24 nautical miles from the California baseline** require modification of the vessel?

Yes No If Yes, please comment below.

Check boxes for modifications required and estimate cost (if unable to provide individual cost estimates, please estimate total modification cost \$)::

fuel tank(s) \$ cylinder lube oil system \$ fuel valves \$ fuel piping and pumps \$

engine fuel pumps \$ engine fuel injectors \$

Other, please explain other modifications that will be required and estimate the associated costs:

Would requiring low sulfur MGO use in main engines while operating out to **50 nautical miles from the California baseline** require modification of the vessel?

Yes No If Yes, please comment below.

Check boxes for modifications required and estimate cost (if unable to provide individual cost estimates, please estimate total modification cost \$)::

fuel tank(s) \$ cylinder lube oil system \$ fuel valves \$ fuel piping and pumps \$

engine fuel pumps \$ engine fuel injectors \$

Other, please explain other modifications that will be required and estimate the associated costs:

Would requiring low sulfur MGO use in main engines while operating out to **100 nautical miles from the California baseline** require modification of the vessel?

Yes No If Yes, please comment below.

Check boxes for modifications required and estimate cost (if unable to provide individual cost estimates, please estimate total modification cost \$)::

fuel tank(s) \$ cylinder lube oil system \$ fuel valves \$ fuel piping and pumps \$

engine fuel pumps \$ engine fuel injectors \$

Other, please explain other modifications that will be required and estimate the associated costs:

Vessels That Transport Refrigerated Containers

What power is required during loading and unloading of refrigerated containers?	kW	What power is required while hotelling?	kW
On average, how many refrigerated containers are imported to a California port?	Exported?		
Time required for unloading refrigerated containers:	hours	Time required for loading refrigerated containers:	hours
Please comment on any seasonality impacts on refrigerated container volume in the comments section.			

Comments (please use additional sheets if necessary):