Comment 1 for Fuel Requirements for Ocean-Going Vessels (fuelogv08) - 45 Day.

First Name: Ronald
Last Name: Forest
Email Address: Non-web submitted comment
Affiliation:

Subject: Matson Navigation Company
Comment:

Please see attached.

Attachment: 'https://ww2.arb.ca.gov/sites/default/files/BARCU/barcu-attach-old/fuelogv08/2-oceangoing0003.pdf'

Original File Name: oceangoing0003.pdf

Date and Time Comment Was Submitted: 2008-07-18 15:35:46

No Duplicates.

Comment 2 for Fuel Requirements for Ocean-Going Vessels (fuelogv08) - 45 Day.

First Name: John
Last Name: Kaltenstein
Email Address: jkaltenstein@foe.org
Affiliation: Friends of the Earth and others

Subject: Support comments from environmental & community groups re: OGV fuel rule
Comment:

```
Dear ARB,
   Thank you for considering these comments on behalf of Friends
of the Earth and other environmental and community groups in
strong support of the ocean-going vessel fuel rule.

Regards,

John Kaltenstein
Friends of the Earth
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Attachment: 'https://ww2.arb.ca.gov/sites/default/files/BARCU/barcu-attach-old/fuelogv08/3-enviro_coalition_comments_re_ogv_fuel_rule.pdf'

Original File Name: Enviro Coalition comments re OGV fuel rule.pdf

Date and Time Comment Was Submitted: 2008-07-21 16:09:48

No Duplicates.

Comment 3 for Fuel Requirements for Ocean-Going Vessels (fuelogv08) - 45 Day.

First Name: Barry
Last Name: Wallerstein
Email Address: bwallerstein@aqmd.gov
Affiliation:

Subject: South Coast Air Quality Management District
Comment:

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Please see attached.
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Attachment: 'https://ww2.arb.ca.gov/sites/default/files/BARCU/barcu-attach-old/fuelogv08/4-scaqmd_staff_comments_-_carb_ogv_fuel_reg_-_071608-4.pdf'

Original File Name: SCAQMD Staff Comments - CARB OGV Fuel Reg - 071608-4.pdf

Date and Time Comment Was Submitted: 2008-07-22 15:12:36

No Duplicates.

Comment 4 for Fuel Requirements for Ocean-Going Vessels (fuelogv08) - 45 Day.

First Name: T.L.
Last Name: Garrett
Email Address: tgarrett@pmsaship.com
Affiliation: Pacific Merchant Shipping Assoc.

Subject: PMSA Comments on Proposed Vessel Fuel Sulfur Regulation.
Comment:

```
PMSA's comment letter is attached, I will also submit this comment
letter with all the attachments in a zip file seperately.
```

Attachment: 'https://ww2.arb.ca.gov/sites/default/files/BARCU/barcu-attach-old/fuelogv08/5-pmsa_comments_on_vessel_fuel_sulfur_regulation_-__23jul08.pdf'

Original File Name: PMSA Comments on Vessel Fuel Sulfur Regulation - 23Jul08.pdf

Date and Time Comment Was Submitted: 2008-07-23 08:49:10

No Duplicates.

Comment 5 for Fuel Requirements for Ocean-Going Vessels (fuelogv08) - 45 Day.

First Name: T.L.
Last Name: Garrett
Email Address: tgarrett@pmsaship.com
Affiliation:

Subject: Pacific Marine Merchant Shipping Association (PMSA)
Comment:

Please see attached.

Attachment: 'https://ww2.arb.ca.gov/sites/default/files/BARCU/barcu-attach-old/fuelogv08/6-draft_proposal_to_carb_re_fuel_sulfur_regulation.pdf'

Original File Name: DRAFT Proposal to CARB re Fuel Sulfur Regulation.pdf

Date and Time Comment Was Submitted: 2008-07-23 10:14:42

No Duplicates.

Comment 1 for Fuel Requirements for Ocean-Going Vessels (fuelogv08). (At Hearing)

First Name: Randal
Last Name: Friedman
Email Address: Non-web submitted comment
Affiliation:

Subject: US Navy
Comment:

please see attached

Attachment: https://ww2.arb.ca.gov/sites/default/files/BARCU/barcu-attach-old/fuelogv08/7-randal_friedman.pdf

Original File Name: Randal Friedman.pdf

Date and Time Comment Was Submitted: 2008-07-29 09:51:48

No Duplicates.

Comment 2 for Fuel Requirements for Ocean-Going Vessels (fuelogv08). (At Hearing)

First Name: Jack
Last Name: Broadbent
Email Address: Non-web submitted comment
Affiliation:

Subject: Bay Area AQMD
Comment:

please see attached

Attachment: https://ww2.arb.ca.gov/sites/default/files/BARCU/barcu-attach-old/fuelogv08/8-jack_broadbent.pdf

Original File Name: jack broadbent.pdf

Date and Time Comment Was Submitted: 2008-07-29 10:23:26

No Duplicates.

Comment 1 for Fuel Requirements for Ocean-Going Vessels (fuelogv08) - 15-1.

First Name: Stephen
Last Name: Brown
Email Address: Non-web submitted comment
Affiliation:

Subject: Chamber Shipping
Comment:

please see attached

Attachment: https://ww2.arb.ca.gov/sites/default/files/BARCU/barcu-attach-old/fuelogv08/9-stephen_brown.pdf

Original File Name: Stephen Brown.pdf

Date and Time Comment Was Submitted: 2009-03-19 08:40:18

No Duplicates.

Comment 2 for Fuel Requirements for Ocean-Going Vessels (fuelogv08) - 15-1.

First Name: Joseph
Last Name: Angelo
Email Address: joe.angelo@intertanko.com
Affiliation: INTERTANKO

Subject: Comments on CARB proposed regs for fuel sulfur for ocean-going vessels
Comment:

Comments submitted by the International Association of Independent Tanker Owners (INTERTANKO) and the Oil Companies International Marine Forum (OCIMF) on CARB regulations

With regard to the California ARB Modified Regulatory Language for 15-day Comment Period on the FUEL SULPHUR AND OTHER OPERATIONAL REQUIREMENTS FOR OCEAN-GOING VESSELS WITHIN CALIFORNIA WATERS AND 24 NAUTICAL MILES OF THE CALIFORNIA BASELINE, the INTERTANKO and OCIMF have the following comments:

1. The majority of the tankers will be significantly affected by burning marine distillate fuels in the main engines, auxiliary engines and auxiliary boilers which assume risks and thus require some substantial and Essential Modifications

A. Main Engine:- the main engines of commercial ships, including tankers have been designed to utilize marine residual fuel oil with a kinematic viscosity up to 700 cSt at 50 Celsius degrees and marine diesel oil specification ISO 8217, DMB grade. The DMB grade marine diesel oil is defined as distillate with maximum viscosity of 11.5 cSt and without minimum limit. Those marine diesel oils can be used, at least theoretically without any problem to the engine and relevant procedure has also been identified by maker. However, supply of MDO with a sulphur content < 0.5% is a serious impediment to ensure compliance by using this fuel type. The alternative given in the CARB regulation is to use MGO (ISO 8217, DMA grade) of <1.5% sulphur content. The specification of the marine gas oil indicates that the maximum viscosity is 6.0 cSt and the minimum is 1.5 cSt at 40 Celsius. However, direct experience indicate that most of MGO were bunkered by ships, worldwide were between 2.5 to 3.5 cSt at 40 Celsius or even less than those figures.

An increase in temperature reduces MGO viscosity which, in turn, lowers the lubricating properties of the oil. This is detrimental to the fuel pumps, which rely on the oil as their source of lubrication for the gear scrolls and is compounded by the fact that the lower sulphur content of the MGO also reduces the lubricating properties of the fuel.

The fuel pumps of the main engine have been designed to run when the marine fuel in use is not less than 2 cSt in order to avoid any seizure between plunger and barrel and further failure of the pumps. However, the kinematic viscosity will obviously be lower as the ambient temperature of the environment on which they are

supplied to the main engine is higher (around 80 Celsius). The request of use of MGO/DMA grade would require consideration of alternative measures, such as:

• segregating the fuel piping system (dual fuel)
• extra insulating the piping system
• cooling the MGO down to appropriate temperature to maintain at least 2 cSt
• change to suitable pumping and transferring MGO system

All these issues have feasible technical solutions but require significant modifications in the engine room. They are time consuming activities and raises the question on whether the new equipment which might be required would be available and installed by July 1st, 2009.

B. Auxiliary Diesel Engines – Same concerns: as above with regard to the limitation for the fuel pumps.

C. Auxiliary Boilers – The most serious safety concern associated with the requirement of switching from the HFO to MGO in marine boilers is the increased risk of furnace explosion in the event of a flame failure. The increased risk results from two factors, a) the temperatures created in the furnace during operation and b) the properties of the MGO.

The ships do use MGO for cold flashing of the boilers which is an acceptable practice as the furnace temperatures are much lower and therefore the risks associated with generating fuel vapours and igniting them is much less. After the initial flashing with MGO, the boilers are fed with HFO. Although, given time, HFO will also vaporise, the heavier fractions within in it mean that the process will take much longer. In addition, the auto ignition temperature of HFO is higher than that of MGO meaning that the risk of explosion is much reduced.

Approaching the 24 nautical miles limit from the California Baseline, ships will be required to comply with this regulation by switching from HFO back to a much more volatile MGO. The combination of MGO atomisation through the burner nozzle and the heat energy residing within the furnace tubes and refractory materials would cause the fuel to vaporise. This vaporisation can lead to a highly explosive vapour being present in the furnace. This can then be ignited from hot spots within the furnace, tubes and refractory material, by small smouldering ash on the furnace floor or through incorrect operation of the boiler. That any of these may produce an explosion has long been recognised (The UK MCA ‘M’ notice M.1083, reprinted in part in the MCA’s Marine Information Note accompanying the introduction of this Directive, MIN 258, states that ‘When using distillate fuels in burners designed for use mainly with heavier fuels these dangers are increased and in those conditions steam atomisation should not be used.’).

During normal operation of the boiler outside of the CARB area the boiler burner will be adjusted to burn HFO. Changing the boiler to operate on MGO will affect the flame length by making it shorter as the MGO will burn faster unless the burner is adjusted at each changeover. The effect of reducing the flame length is to reduce the surface area of the flame and therefore its radiant heat. For boilers operating towards their maximum firing rate such as would be the case for vessels which discharge cargo by steam turbine

driven pumps this will limit their ability to operate cargo oil pumps at the maximum rate and therefore slowdown the discharge. The required adjustment of the burner is not a simple procedure as it is an iterative process and can take some time to achieve good combustion of the new fuel.

Manufacturers recommend a number of modifications needed to minimise the risk when complying with requirements to switch from HFO to MGO in boilers. Modifications are required beyond the fuel system (e.g. pumps , steam atomizing system, purging sequence, flame supervision, software adjustments etc).

All these modification require time. Many ships calling at California may not be ready to have all these modifications in place by July 1, 2009.

2. Availability of MGO

INTERTANKO and OCIMF are concerned with the current approach of the proposed rule on the availability of marine distillates in the market. It is hard to understand the logic of imposing by rule significant non-compliance fees on ships which have to demonstrate that they genuinely did not manage to find compliant fuel on the market.

But more worrying is that the proposed rule does not even guarantee supply of complaint fuel on the Californian ports. The lack of such a provision may lead to unacceptable situations on which ships will be considered “non compliant” because they cannot find the complaint fuel in California. As an example, a ship may arrive at California with compliant fuel but she would not have sufficient MGO to leave. In case there is no supply of MGO or low sulphur MDO in the Californian port, the rule would still consider the ship “non compliant” and it will impose a financial penalty.

Our concern is not without substance. A ship had recently called to California and the crew has investigated the possibility of bunkering MGO and MDO from a local supplier. The supplier replied that he will be able to supply MGO only (not MDO) after four days!!!

It is the view of INTERTANKO and OCIMF that the State of California should have shown leadership and, through regulatory provisions should be prepared to support the proposed regulation in practical terms. We hope that our comments are seriously considered by CARB and modifications are made top mandate compliant fuel supply at any time. Supply of proper fuel is the key element that would provide ships the ability to meet the proposed regulations.

The consequence of poor and uncertain supply of complaint fuel world wide would mean that ships, particularly tramp shipping such as tankers would need to seek supply in different ports and keep MGO onboard in case they would be required to arrive to California. This may required modifications for a larger and diversified fuel storage system. These modifications also take time.

Attachment:

Original File Name:

Date and Time Comment Was Submitted: 2009-03-23 04:24:50

No Duplicates.

Comment 3 for Fuel Requirements for Ocean-Going Vessels (fuelogv08) - 15-1.

First Name: Randal
Last Name: Friedman
Email Address: randal.friedman@navy.mil
Affiliation: United States Navy

Subject: Comments on OGV Fuel Reg
Comment:

Attached please find the Navy's comments on the supplemental environmental assessment for the OGV fuel regulation.

We believe that the analysis should have included a 0% avoidance (full compliance) alternative and absent that does not provide an adequate analysis for such a significant policy issue. We continue to believe that a stakeholder process is needed that considers a full spectrum of alternatives, including incentives, to assure that commercial shipping remains in long established shipping lanes and avoids the potential significant disruption, and environmental impacts, from an alternative through our Sea Range.

We look forward to continuing discussion.

Attachment: https://ww2.arb.ca.gov/sites/default/files/BARCU/barcu-attach-old/fuelogv08/11-comments_on_arb_ship_channel_stu.pdf

Original File Name: COMMENTS ON ARB SHIP CHANNEL STU.pdf

Date and Time Comment Was Submitted: 2009-03-23 09:22:00

No Duplicates.

Comment 4 for Fuel Requirements for Ocean-Going Vessels (fuelogv08) - 15-1.

First Name: T.L.
Last Name: Garrett
Email Address: tgarrett@pmsaship.com
Affiliation: Pacific Merchant Shipping Association

Subject: Submittal of Comments on Modified Text OGV Fuel Sulfur Regulation
Comment:

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See attached comment letter
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Attachment: https://ww2.arb.ca.gov/sites/default/files/BARCU/barcu-attach-old/fuelogv08/12-pmsa_comments_re_15-day_notice_on_fuel_sulfur_regulations.pdf

Original File Name: PMSA Comments Re 15-day Notice on Fuel Sulfur Regulations.pdf

Date and Time Comment Was Submitted: 2009-03-23 10:06:32

No Duplicates.

Comment 5 for Fuel Requirements for Ocean-Going Vessels (fuelogv08) - 15-1.

First Name: Kaity
Last Name: Arsoniadis-Stein
Email Address: kaity@kaitystein.com
Affiliation:

Subject: California Code of Regulations Title 13, Section 2299.2
Comment:

March 23, 2009

Chairman Mary D. Nichols,
Air Resources Board
1001 “I” Street, 23rd Floor
Sacramento
California, 95814

Dear Madam Chairman,

Re: California Code of Regulations Title 13, Section 2299.2--
Regulations on fuel sulphur content and other operational
requirements for ocean going vessels within California waters and
24 nautical miles of the California base line.

On behalf of the International Shipowners Alliance of Canada Inc.
(ISAC), we wish to provide you with our comments regarding CCR
Title 13, Section 2299.2.

We note and endorse in full, the comments posted on line from
Capt. Stephen Brown of the Chamber of Shipping of British Columbia
as well as those of Joseph Angelo of INTERTANKO.

We wish to highlight our concern regarding safety and the fact
that there is a lack of operational expertise for operating
auxiliary boilers on MDO/MGO for long periods of time. Our members
have been advised that for main and auxiliary engines, low sulphur
distillate fuel will most certainly cause problems with pump
failures, seizures and other wear related issues, thus creating
serious navigational and safety issues if vessels lose power or
propulsion in confined waters near the port. The comments
submitted by INTERTANKO clearly set out the technical challenges.

The request of use of MGO/DMA grade is possible, but there are
significant engine modifications required making it challenging to
have all vessels compliant by July 1st, 2009. Finally, we are
aware that suppliers are unable to provide MDO in a timely manner,
an issue of great concern to our industry.

We thank you for the opportunity to comment and trust that our
input will be seriously considered.

Yours sincerely,

Kaity Arsoniadis-Stein LLB, LLM
President & Secretary-General
International Ship-Owners Alliance of Canada Inc.

cc. Cpt. Stephen Brown, Chamber of Shipping, British Columbia
cc: Joe Angelo, INTERTANKO

Attachment:

Original File Name:

Date and Time Comment Was Submitted: 2009-03-23 11:27:39

No Duplicates.

Comment 6 for Fuel Requirements for Ocean-Going Vessels (fuelogv08) - 15-1.

First Name: B. Lee
Last Name: Kindberg
Email Address: Non-web submitted comment
Affiliation:

Subject: Maersk Inc.
Comment:

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Please see attached.
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Attachment: https://ww2.arb.ca.gov/sites/default/files/BARCU/barcu-attach-old/fuelogv08/14-15day0001.pdf

Original File Name: 15day0001.pdf

Date and Time Comment Was Submitted: 2009-04-07 09:46:33

No Duplicates.