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Hanjin Shipping's Response to Notice of Inquiry on Slow Steaming

Hanjin Shipping hereby responds to the Federal Maritime Commission's Notice of Inquiry on the Impact of Slow Steaming.

Questions Directed to Ocean Liner Carriers

1. What does your company see as the advantages and disadvantages of slow steaming?

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Answer to question 1

1) Advantages

- a) **Environmental Contribution:** Slow steaming operations have benefited the environment by reducing the GHG (Green House Gas) emissions levels and in meeting various environmental initiatives / port environmental regulations.
- Hanjin Shipping is a member of the Clean Cargo Working Group and we calculate CO<sub>2</sub> emissions (CO<sub>2</sub> gram/teu-km) per vessels and service lanes using the Environment Performance Assessment. Please refer to the following site for more details.  
<http://www.bsr.org/en/our-work/working-groups/clean-cargo>.
  - We have set a reduction target to reduce 15% of our CO<sub>2</sub> emissions (CO<sub>2</sub> gram/teu-km) by 2015 to 83.5 CO<sub>2</sub> gram compared to our 2008 level of 71.0 CO<sub>2</sub> gram and we are constantly monitoring voyage reports for all our vessels.
- b) **"On-time Reliability" Improvement:** Added buffer time on some of the slow steaming lanes (in case of additional vessel adding), company was able to improve the on-time ratio in meeting customers' service requirement.
- c) **Carrier Sustainability Improvement:** Current marine bunker costs make up roughly over 21% of total vessel operating cost and continue to increase due to rise in global fuel prices. Slow steaming was adopted as one method to partially off-set the bunker cost burden through bunker consumption savings to improve carrier sustainability.

2) **Disadvantages**

- a) **Additional Transit Time:** Depending on the shippers and commodities involved, added transit time on some of the lanes that operate under slow steaming could result in a competitive disadvantage for Hanjin. (i.e.: individual carriers' transit times in slow steaming lanes all differ).
- b) **Asset Additional:** Slow steaming operations requires added charterage (in case of vessels are added into slow steaming lane), additional equipment necessities and additional cost associated with engine maintenance requirements.

2. What proportion of the ships your company operates in the U.S. trades slow steam?

*Answer to question 2 [Confidential]*

[REDACTED]

[REDACTED]

3. Do you have plans to increase or decrease slow steaming during 2011 and/or the years that follow?

**☛ Answer to question 3**

A review of our independent operational economics (Question 4 below explains the economics of slow steaming) will determine the future expansion or reduction to the slow steaming operations. However, we have set an internal objective to reduce GHG emission by 15% by 2015 compared to 2008 level. Whether this target will be accomplished by further increase slow steaming or through other methods will be determined by the operational economic factors and shipping environments.

4. What factors help your company decide to slow steam any given service string?

What factors cause your company do decide whether to slow steam in one direction only?

**☛ Answer to question 4**

- 1) Factors that Hanjin considers in its slow steaming determinations include:
  - a) Major ports' environmental restrictions (Example : California requirements to use low sulphur fuel within 24 miles of the California coast line)
  - b) Demand to reduce carrier emissions that are harmful to the environment
  - c) Shippers' review of carriers' environmental contributions as one factor in determining carrier selection
  - d) Marine Bunker Price (Fuel Costs)
  - e) Vessel Charter Rates
  - f) Container Costs and availability
  - g) Market average transit time on major lanes
  - h) Global fleet supply (New fleet deployment) versus demand

- 2) Hanjin's vessel operations and basic economics do not generally allow one direction slow steaming operations. Determining factors are always based on round trip vessel operations and all effects (GHG emissions, bunker savings) are calculated based on round trip basis. In some cases, due to the demand factor or time sensitiveness of some of the head haul trades' commodities (Trans-Pacific East Bound) more weight will be given to the back haul trades' transit time when slow steaming is operated. (Please reference question 15 for further explanations).
5. In the past year, by how much (i.e., absolute amount and as a percent of the total) has your company reduced its bunker consumption, bunker fuel expenses, and carbon emissions as a result of slow steaming ships in U.S. ocean liner services?

**Answer to question 5 [Confidential]**

[REDACTED]

[REDACTED]

6. Do you make this information on fuel, cost, and emissions savings available and transparent to your customers? If not, do you have plans to, and what is your goal date? If not, why not?

**Answer to question 6**

- 1) Our company provides a Supply Chain Carbon Calculator (Point to Point) through our homepage ([www.hanjin.com](http://www.hanjin.com) → Supply Chain Carbon Calculator). Below is a sample. The carbon calculator is calculated based on CCWG (Clean Cargo Working Group) CO<sup>2</sup> calculator methodology with Hanjin Shipping's emission factor basis of current deployed vessels data and verified by Korean Register.
- 2) We do not publicize specific fuel costs and emission savings as these are proprietary business data. However, we release corporate sustainability reports and carbon disclosure project reports on a case by case basis upon individual customer request. We are also responsive to our customers' individual requests for information regarding any bunker charges that are being applied.

**[Sample Carbon Calculator]**

**Supply Chain Carbon Calculator**

**What is Supply Chain Carbon Calculator ?**

With this, you can calculate CO<sub>2</sub> emissions of your container's supply chain by the following logic.

	Truck, Rail, Barge	Vessel	Truck, Rail, Barge	
<b>POR</b>		<b>POD</b>		<b>DEL</b>
	<b>CO<sub>2</sub> Emission 100Kg</b>	<b>CO<sub>2</sub> Emission 1,000Kg</b>	<b>CO<sub>2</sub> Emission 200Kg</b>	
Origin				
Destination				
Cargo WT				Ton
From Location	To Location	Mode	Distance (km)	CO <sub>2</sub> Emission (kg)
BUSAN	LONG BEACH, CA	DR	5515	1330
LONG BEACH, CA	CHONGQUIL	Ra Direct	2475	552
<b>Total</b>				<b>2.322 kg</b>

7. Do you offer shippers, over the same trade lane, different transit times by reason of slow steaming vs. normal steaming?

**Answer to question 7**

- 1) No, we do not differentiate the selling rate of price per slot to our customer based on slow steaming versus normal steaming. On an annual basis, daily vessel operational environment (Please reference question 5 factor associated with vessel operations) differs along with customer demand factors on certain periods. Thus, slow steaming duration / lanes vary and as a result of this inconsistency it would be difficult to sell a differed service on the same trade lane.
- 2) Also with 99% of our Trans-Pacific business being carried under annual service contracts it is difficult to differentiate the freight level based on slow steaming versus normal steaming.

8. Have you passed cost savings along to shippers through adjustments to any bunker surcharge formulas, or by lowering rates? If not, do you have plans to, and what is your goal date? if not, why not?

**Answer to question 8**

We are currently considering whether to change our bunker charge formula, both individually and in conjunction with the rate discussion agreements in which we participate. But even though slow steaming helps carriers save on fuel costs, there are other costs involved in slow steaming that often offset those costs, such as the costs of additional vessels and equipment. Thus, the cost saving issue is complex. In answer to the other questions, rates and charges in key trades have been dropping recently, and so many of our customers have seen cost savings. As stated, most of our business is negotiated through individual service contracts, and the bunker charge is part of those discussions.

9. Are there any costs incurred by the ships your company is slow steaming that would not accrue if they were operating at normal service speed and, if so, what are these costs and how significant are they?

**Answer to question 9**

Yes, additional costs associated with slow steaming are as per following:

- Additional vessel deployment (Added charterage and operational cost)
- Technical costs for changing ship engine suitable for lower speed (retrofit costs and spare part cost)
- Additional equipment requirement as more containers are in the ocean after slow steaming.

10. What factors constrain your company's ability to slow steam more services or to further slow down ships that are already slow steaming (i.e., super-slow steaming)?

**Answer to question 10**

- 1) Factors constraining our ability to slow steam are :
  - a) The availability of identical vessels (same vessel size) for the string
  - b) Distance of service route  
(If distance is short, slow steaming would not be practical option)
  - c) Competitiveness of our service in terms of transit time in comparison with market average transit time.
  - d) Increase in charter hire rates for any additional vessels needed
  
- 2) At the moment, we do not have any future plans to adopt super slow steaming in the Trans-Pacific.

11. How many vessels do you add to service loops that begin slow steaming for part or all of the loop? Are there instances where vessels are not added?

**☛ Answer to question 11**

- 1) Slow steaming operations do not necessarily require adding a vessel. Factors to consider prior to adding a vessel :
  - a) Rationalization of Asia ports (dropping of calling ports) where allowable
  - b) Replacement of operating vessel to fuel efficient vessel (GHG emissions reduction & fuel saving).
- 2) If above factor is not workable, vessel adding (normally one vessel) is considered as last option for slow steaming operations.

12. Is your company adding new vessels to your fleet to accommodate slow steaming?

**☛ Answer to question 12**

No, we are not adding new vessels to our fleet to accommodate slow steaming.

13. Are new ship designs incorporating hull and propulsion engine innovations to better accommodate slow steaming?

**☛ Answer to question 13**

New ships are not designed with the purpose to accommodate slow steaming. It is designed with objective to build fuel efficient vessels and to attain economics of scale through larger size vessels. With improved technologies, fuel efficiency can be accomplished through better hull design as well as fuel efficient engines. With better technologies, the engines are obviously more flexible in

accommodating slow steaming versus vessels designed in an era before slow steaming was common.

14. How has slow steaming impacted your company's on time performance of sailing schedules?

**☛ Answer to question 14**

On time performance has not impacted the sailing schedules after slow steaming. In some cases, due to added buffer time on some of the slow steaming lanes, we were able to better manage on time performance and where necessary vessels are able to increase speed to decrease transit time. This has invariably resulted in improved on time ratio.

15. Are some shipper accounts more affected by slow steaming than others? If so, please explain. What measures has your company taken to try to mitigate any adverse impact of slow steaming on specific shipper accounts?

**☛ Answer to question 15**

- 1) Yes, as stated in question 4, some commodities in the head-haul trade are more time sensitive and affected by slow steaming than others, including back-haul trades commodities (mostly raw materials). Manufactured goods in general tend to be more time sensitive as they relate to actual store sales and also replenishment of inventory levels.
- 2) Most of our business is carried under individual service contracts. Prior to finalizing the service contracts, rates, terms and conditions, and yearly service plans are part of those negotiations. The market provides various services to accommodate each customer's needs and it is the customer's choice to select its preferred carrier based on its service requirements.

16. To what extent has slow steaming affected your company's ability to maintain or expand capacity in the U.S. trades and/or its ability to maintain adequate availability of containers at appropriate inland locations?

**☛ Answer to question 16**

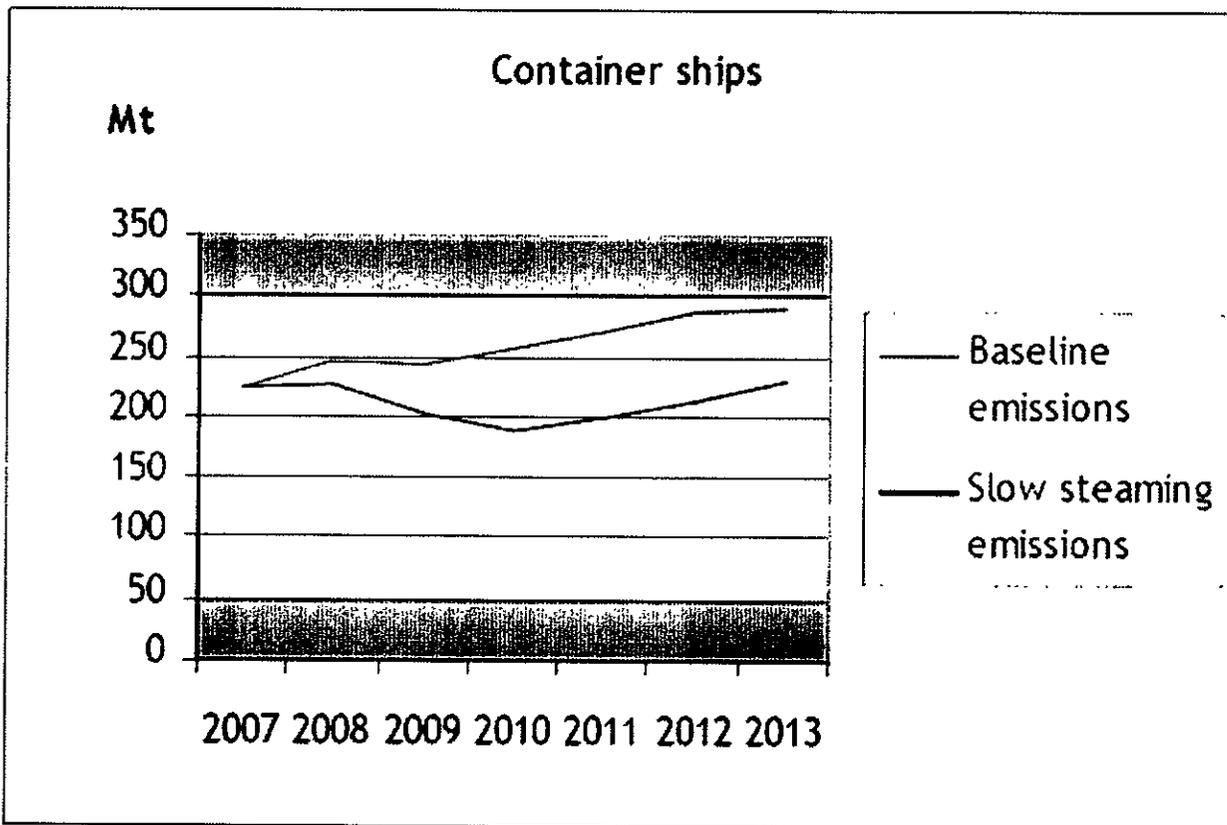
- 1) Slow steaming has not affected our company's ability to expand capacity in the U.S. trades
- 2) Equipment availability will not be an issue due to slow steaming as we have set plans to purchase/lease necessary containers based on increase vessel deployment.

17. Do you believe slow steaming is sustainable over the long-run? Please explain why or why not.

**☛ Answer to question 17**

- 1) With slow steaming now becoming a general practice within the industry, slow steaming will be sustainable in the long run as continuing options for carriers to respond to the adoption of various environmental standards. Going back to the past operations pattern will only increase GHG emissions and fast forward the green house effect (climate change).
- 2) Also with the continued rise in global fuel prices, slow steaming will be adopted by many carriers as one method to partially off-set high bunker costs. Please reference below for underline facts:
  - a) The GHG emissions of international "shipping industry" amounts to about 2.7% :
  - b) Electricity and Heat production : 35.0%
  - c) Other Transport (Road) : 21.3%
  - d) Manufacturing industries and constructions : 18.2%
  - e) **International shipping : 2.7%**
  - f) International Aviation : 1.9%

- 3) Carbon footprint by transportation mode (Grams of CO<sup>2</sup> emitted by transporting 1 tonne of goods 1km) :
- a) Aircraft : 560 Grams CO<sup>2</sup>/1km transported
  - b) Truck : 47 Grams CO<sup>2</sup>/1km transported
  - c) Train (Diesel) : 21 Grams CO<sup>2</sup>/1km transported
  - d) **Ship : 8 Grams CO<sup>2</sup>/1km transported**
- 4) Shipping is the most environmentally friendly transportation mode versus other transportation modes. Seas at Risk ([www.seas-at-risk.org](http://www.seas-at-risk.org)) has submitted a report in January of 2010 to IMO stating that a containership can reduce 30% of its GHG emissions through slow steaming compared to normal operating conditions.



Source: [www.seas-at-risk.org/pdfs/speed%20study\\_Final%20version\\_SS.pdf](http://www.seas-at-risk.org/pdfs/speed%20study_Final%20version_SS.pdf)

18. If your company participates in one or more vessels sharing arrangements ("VSAs"), describe whether and to what extent VSAs are positively or negatively impacted by slow steaming.

**☛ Answer to question 18**

- 1) For the strings operated by a single carrier, carriers independently decide whether to slow steam their vessels. However, for strings that are jointly operated, one single carrier cannot decide on a re-design of a service on its own, but must approach these decisions in consultation with its trading partners. Discussions among member carriers are necessary for the decision on slow steaming as each carrier's preference on ship speed or addition of new ships would be different. By assessing their own commercial needs and preferences, carriers then independently decide whether to take space on vessels that are slow steamed.
  
- 2) As commented in question 17 above, slow steaming now has become a general practice within the industry. With the basic understanding behind slow steaming in place, thus balancing interest exists among member of VSAs thus VSAs are not negatively impacted by slow steaming.

**Questions directed to all interested parties**

1. What are the major benefits and costs associated with slow steaming?

**☛ Answer to question 1**

Please see question 1 'advantages' above (Question to Carriers)

2. To what extent has the slow steaming of services in the U.S. ocean liner trades reduced greenhouse gas emissions?

**☛ Answer to question 2**

The regulation of GHG emissions will continue to be tightened in major ports/cities throughout the world. For liner carriers, slow steaming is the most effective way to reduce GHG emissions in meeting these environmental regulations. But considering various internal

and shipper requirements, increasing the ratio of slow steaming in Trans-Pacific will be limited.

3. Discuss the likely long-term prevalence of slow steaming and its potential impacts on the economy and/or the environment.

**✍ Answer to question 3**

► As an example of some of the potential impacts to the economy and/or the environment if we were to normalize service will be :

- If vessel speed is increased by 15% to 22 knots from current slow steaming of 18~20 knots, the cost of fuel consumption and GHG emission is expected to increase.
- As stated above, several factors (below) exist which will strengthen the likeliness of slow steaming being adopted as normal shipping activities.
  - Continued adoption of more strict environmental regulations throughout the world
  - Trade conditions in U.S and EU still under recovery mode
  - Middle East instability continues to affect the price of fuel at high level.

4. How important is slow steaming in the overall effort to reduce emissions of greenhouse gases and other air pollutants arising from ocean liner operations?

**✍ Answer to question 4**

Please reference question 17 above for the details on the shipping industry's overall effort to reduce GHG emissions.

5. What data sources are available to measure the economic and environmental impacts of slow steaming?

**✍ Answer to question 5**

Please see question 1 'advantages' above (Question to Carriers)