MRV of Carbon Dioxide Emissions and Shipping – Some Practical Observations

IFLOS Hamburg, March 22 2014

4120 SM Director Environmental Fleet Management   Captain Wolfram Guntermann
1.) Introduction
2.) MRV Debate
3.) Reporting today
4.) Evaluation and Certification
Who is speaking?

- Captain Wolfram Guntermann
- Director Environmental Fleet Management, Hapag-Lloyd AG Ship Management
- Sailing Career began in 1979
- Masters and Engineers Licence, sailing as Ship Operation Officer
- Master on several Hapag-Lloyd Vessels
- Assignments to positions ashore in London, New York and Hamburg
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EU COM Legislation on Monitoring, Reporting and Verification

**Original EC Proposal June 28 2013:**

- Goal to report total Carbon Dioxide Emissions is generally acceptable
- Aggregated emissions from all voyages within EU, departing and going to EU States
- Carbon Dioxide Emissions while in port
- Report total distances travelled
- Report total time spent at sea
- Report total transport work
- Report cargo carried
- Report average energy efficiency
- Certify monitoring method and results

- How much of this micro managed scrutiny is really needed to give a realistic indication of Greenhouse Gas Emissions by Shipping?
International Debate on Monitoring, Reporting and Verification

EP Environment Committee presented

- Reduction of 5000 GRT to 400 GRT being aligned with MARPOL Annex VI
- Include reporting of Nox
- Deletion of reporting cargo and transport work
- Total distance travelled remains
- EP Plenary Reading scheduled for April 14 2014
- A realistic solution should be reached to avoid any tug of war between EU and IMO

Which result can be expected?
International Debate on Monitoring, Reporting and Verification

Submissions to IMO MEPC

- IMO MEPC 66 will be held at London already March 31 to April 04 2014
- A number of submissions to IMO regarding MRV were made:
  - ICS support for MRV (Fuel and distance sailed)
  - United States: 3 Phase Approach
  - Germany + Japan (EEOI, ISPI, FORS)
  - Submission by 28 EU States „MRV Light“
  - Likeminded States: Energy Efficiency Data Collection System

What can be expected from IMO MEPC?
Intentions of MRV

Concerns about next steps

- EU is clearly admitting to use this regime as a precondition to implement an Emission Trading System
- An ETS will result in additional costs for our industry
- Publication of commercial sensitive cargo data and alleged vessel efficiency ("name and shame")
- The administrative „Data Leviathan“ will require additional headcount
- Certify monitoring method and results (Lucrative business for Classification Societies)
- Politicians state MRV would be necessary to incentivise economic ship operation
- Do we need more incentives than already given by bunker price developments?

Where is this development heading to?
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Monitoring: Existing Processes on Board

**Master and Chief Engineer**

- More than 50% of the operating costs are fuel costs being decisive driver for efficient operation
- It is the Master’s responsibility to navigate the vessel in a safe and economic way
- This task will be conducted in close cooperation with the Chief Engineer.
- Day’s run evaluation or whenever required at shorter intervals, are done mutually.
- Main engine consumption, distance steamed, engine revolution, slip, weather, state of the sea, currents etc. are documented in deck and engine log book.
- Checking the day’s run performance is more comprehensive than checking the fuel consumption of a private vehicle.
- Taking any remedial actions are more a real time process than reacting to data “after the facts”
Some companies may claim they are already using state of the art reporting tools.

Certainly there are still some “old fashioned” companies with just log books and paper records.

We may find us somewhere in between with evaluation processes ashore established for a long time.

Speaking in navigational terms, we are in a process of position finding to determine which new reporting systems may fit best in the future.

The key purpose will be an internal performance evaluation system.
GHG Reporting already established

- Hapag-Lloyd is a member since 2002

- Fuel consumption of fleet is collected on an annual basis and submitted to CCWG early spring each year.

- This is already an enormous administrative effort for various departments involved.

- Name of company must remain anonymous.

- CO2 conversion factor being used is 3.1144 t-CO2 / t-Fuel in line with MEPC 212(63).

- Reporting of GHG from ships already fulfilled
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You are driving your rental car and listen to the traffic and weather forecast on the radio.

Nominal temperatures values of Fahrenheit and Centigrade do not match without a conversion calculation.

While navigating the streets of SFO, you will be prompted to conduct the mental calculation exercise: \( t(F) - 32 \times \frac{5}{9} = t(C) \)

Well known scenario in the temperature controlled cargo business due to risk of erroneous documentation and claims.

Urgency for a common standard.
Certification of Ship Efficiency

Abundance of Standards

- Increasing number of different initiatives by ports and other organisations

- Figures are not comparable, same as the temperatures on our radio weather forecast

- One particular initiative changed the way of calculating the vessel scoring three times within 2 years

- Some initiatives do not show the actual technical condition of a ship, i.e. whether there was derating by TC cut out or a shaft generator in use

- Jeopardy of providing a false rating

- Urgency for a common standard

Just to name a few of them
Certification of Ship Efficiency

MV Colombo Express

IMO Technical Rules on CO2 July 2011

- Ship Energy Efficiency Management Plan (SEEMP) implemented in Summer 2011
- Entire fleet under own management and German flag certified under Energy Efficiency Design Index (EEDI) already in February 2012.
- Independent certification was carried out by Germanischer Lloyd for existing vessels.
- However, Hapag-Lloyd concurs with various industry groups that the EEOI (Energy Efficiency Operational Indicator) has not reached maturity yet.
- Identical ships with different load cases cannot be compared to each other
- How do you measure Full, MT in slings having trade imbalances such as Trans Pacific?
- The voluntary EEOI as proposed cannot be pursued in EU Legislation either.
Energy Efficiency Design Index

Develop an EEDI for existing ships

- "The purpose of the EEDI is to provide a fair basis for comparison, to stimulate the development of more efficient ships …“ (IMO MEPC 65/WP10)
- MEPC 66 will further develop EEDI- and SEEMP-related guidelines in accordance with the work plan agreed at MEPC 63 (MEPC 63/23, annex 12).
- EEDI is a robust method to evaluate ship efficiency by means of propulsion power and transport work
- A static cargo deadweight factor 70% applied in the EEDI formula will be sufficient for a robust documentation of ship efficiency
- EEOI deficiencies should be avoided
- EEDI verification is applied on a voluntary basis, a Statement of Compliance is issued by GL.

First EEDI SoC for MV Vienna Express
Thank you very much for your attention!

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