The 12th TFMS Forum in Japan
RTA / RPM / Emission Management by OSR
— Summary Report —

9th June 2011 at the Hotel New Otani

Forum Attendees

CLIPPER Bulk
COSCO Container Lines Co., Ltd.
DAIICHI CHUO KISEN KAISHA
EASTERN CAR LINER, LTD.
EVERGREEN SHIPPING AGENCY (JAPAN) CORPORATION
HACHIUMA STEAMSHIP CO., LTD.
Höegh Autoliners
HYUNDAI MERCHANT MARINE CO., LTD.
HYUNDAI U & I Technology Co., Ltd.
IDEMITSU TANKER CO., LTD.
Inui Steamship Co., Ltd.
Japan Airlines Co., Ltd.
JFE LOGISTICS CORPORATION
JX TANKER COMPANY LIMITED
Kawasaki Kisen Kaisha, Ltd.
MC SHIPPING LTD.
Mitsui O.S.K. Lines, Ltd.
Mitsubishi Ore Transport Co., Ltd.
MOL LNG TRANSPORT CO., LTD.
MOL Naikou , Ltd.
Monohakobi Technology Institute
Nissan Motor Car Carrier Co., Ltd.
Nissho Shipping Co., Ltd.
NYK Global Bulk Corporation
NYK LINE
Pacific Basin Shipping Limited.
THE SANKO STEAMSHIP CO., LTD.
SANKO SHIP MANAGEMENT CO., LTD.
Weathernews held the 12th Total Fleet Management Service (TFMS) Forum on 9th June 2011 in Makuhari with 88 attendees from 27 shipping companies. One of the small, yet important changes to the meeting set up is to make it a “forum” from the past “seminar”, thus ensuring a two-way communications with participants. On the Forum agenda of environmental issue and bunker saving issue, three directional speeches were presented which were followed by a lively discussion by the attendees referring to the latest development of Weathernews Optimum Ship Routeing (OSR) service.

### Directional Speeches

#### All for Sustainable Transportation – Keiko Kosugi (NYK Lines)
- Global shipping industry and environment
  * Marine transportation accounts for 90% of global distribution, but only 3% of emissions.
  * Kyoto Protocol defined the shipping industry’s green agenda to be managed by the IMO.
  * Economic solutions (carbon dioxide emission trading and environment tax) in addition to hardware/software solutions.
- NYK’s long-term environment strategy:
  * 10% reduction of CO₂ per MT/mile
  * 69% reduction of CO₂ by Eco Ship as our long-term vision
  * Cargo owners’ involvement in safety, economy and environmental agenda is mandatory

#### Emission reduction by ships

- Hironori Niwase (Kawasaki Kisen Kaisha, Ltd)

- Safety navigation as basis of environmental agenda
- EEDI and EEOI
- Distribution revolution
  * Berthing reservation system to reduce waiting time
  * Speed reduction for CO₂ reduction
- Navigation revolution
  * Speed, fuel oil restriction, cold ironing at the port of Long Beach
  * Speed reduction in Ise Bay, Japan
  * Ship operations visualization by Weathernews Optimum Ship Routeing service
  * Optimum route selection and speed optimization meeting Required Time of Arrival
  * From ship-dependent efficiency enhancement to shore-side supported economical steaming with stable outputs

#### Bulker ship operations optimization

- Masatoshi Nakajima (Mitsui O.S.K, Lines Ltd)

- Speed reduction instruction alone is not enough. Real-time problem finding and risk communication taking into account expected weather conditions and ship performance analysis will help ship operations optimization.
- Tramper business changing the definition of “total optimization” - from quickest arrival voyage on each voyage to shore-side supported optimum voyage planning and ship operations on consecutive voyages.
- A variety of factors involved in optimum voyage planning and operations - prioritization of these factors and sharing among all players involved.
  * Lay/Cain
  * Charter Base
  * Area-wise market price and forecast
  * NOR
  * Port operations availability
  * Demurrage
  * Premium
What Weathernews Can Do for Optimizing Your Voyage Planning.

What WNI Can Do for Your Market

- **OSR for Bulker**
  
  - Complicated operations
    
    OSR service can be a valuable service in maximizing Charter-based profit when Weathernews understand business factors involved and business planning process.
  
  - Visualization of voyage operations and database management for voyage planning accuracy enhancement
    
    Weathernews presented actual examples of bunker savings by OSR service and suggested procedures of maximizing business profit based on correct understanding correlation among RPM / Speed / fuel consumption and ship-specific demonstrated speed reduction characteristics.

- **OSR for Container - RTA management and fuel savings**
  
  OSR supported trans-Indian Ocean crossings in fuel savings with optimum RTA management and speed/RPM optimization to meet the RTA.

- **OSR for PCTC – Environmental issues**
  
  OSR enabled PCTC operators to save bunkers quickly through speed reduction determined by expected maritime weather forecasts and arrival fuel consumption calculations which were shared among ship Masters and shore-side operations. Safe and economical voyages were achieved on Indian Ocean crossing voyages through 24 x 7 ship route / speed monitoring and adjustments shared by shore-side operations.

Technical Innovation

- **OSR for Container - RTA management and fuel savings**
  
  - Piracy
    
    * Cooperation among shipping companies
    * Weathernews satellite to gather and disseminate piracy information
  
  - Tsunami
    
    * Weathernews Marine Radar for real-time TSUNAMI monitoring
    * Weathernews TSUNAMI alarm for ship Masters and shore-side operators
  
  - Mutual trust and communication enhancement
    
    * Capt.’s DOSCA : Dynamic Operation System for Counter planning and Analysis
Voice from the attendees

Requests to Weathernews:
(1) I expected to hear the latest developments in weather forecast accuracy enhancement projects at Weathernews, but regrettably this was not included in the Forum this time.
(2) Weathernews doesn't have to be directly involved in the Voyage Estimate, but ETA with expected fuel consumption (at max/min RPM), and suggested RPM with expected fuel consumption when arriving at Lay time and Canceling date/time are very useful to make Voyage Estimate reasonable and practical.
(3) We expect enhancement of the OSR performance model estimation accuracy, which improves ship performance assessment accuracy and timely problem finding.
(4) Effective and feasible countermeasures have to be implemented in order to cope with deteriorating ship operators' judgment and increasingly complicated on-board daily operations.
(5) We have to face the fact that about 10~20% of whole voyages are missing Lay/Can. Can OSR service help us?

About “Optimum Ship Routeing” service:
(1) Today I observed that Weathernews OSR service is helping PCTC vessels save bunkers. But I want to make it more effective for ourselves. In order to do this, I would like to be involved in the service enhancement.
(2) While OSR service is very important for shipping industry, shipping companies’ further involvement in OSR service enhancement is essential.
(3) Ship-specific OSR model is necessary in order to maintain punctuality and bunker savings.
(4) Handy size vessels tend to experience greater speed down compared with other ship types. In order to make best use of OSR we would like Weathernews to establish ship-specific OSR model.
(5) I am really looking forward to using OSR service for Tankers.
(6) I expect Weathernews ship report verification as well as consecutive ship performance assessment which should be utilized for optimum ship/fleet maintenance timing and optimum fleet deployment.

Feedback for Weathernews:
(1) I understand Weathernews is working hard to establish new value service for the shipping industry, especially for the Bulk carrier sector.
(2) Today I acknowledged a strong partnership between Weathernews and shipping companies involved in new value service development – Optimum Ship Routeing, Safety Status Monitoring and Performance Status Monitoring.

Evaluation of “Optimum Ship Routeing” service:
(1) Weathernews OSR service should be useful for Bulk carrier operators where ETA and expected fuel consumption at maximum and minimum RTA are calculated in Pre-Voyage Planning, as well as suggested RPM and expected fuel consumption when arriving at Lay time and Canceling date/time.
(2) Weathernews evaluation of ship Master’s ETA and expected fuel consumption should be helpful when operators do not have specific Required Time of Arrival. Also, their en route monitoring of ship ETA and fuel consumption is useful for ship operators.
(3) Ship Master’s en route reports were the only source of voyage evaluation for ship operators so far. But OSR can help us continuously monitor ships to tell us whether or not ships are navigating as planned by ship operators. Very helpful!
(4) With the help of OSR service to be applied across the fleet we are going to modify our own ship operations structure and its flow in order to monitor performance and fleet-wide fuel consumption and initiate alerts to operators as well as to ship masters.
(5) OSR service should be very effective and helpful for LPG and Tanker operation optimization.
(6) I would like to help Weathernews in OSR Performance Model enhancement.
(7) Is it possible to establish a system based on the OSR engine and ship performance database in order to work with the SEEMP project?
(8) OSR service should be effective to monitor weather-related business risks during voyage real-time.
(9) Now I note significant improvement of the OSR model accuracy compared with initial stage. It’s fairly reliable now.
(10) Capt.’s DOSCA looks very good. It should be helpful for ship Masters to better understand reasons behind WNI’s suggested voyage plan.