America’s Marine Highways Development in the U.S

A New Surface Transportation Alternative For the Future

Mark Yonge, Chairman
Marine Highways Committee (SOCP)

10th Annual EyeForTransport 3PL Conference

June 20, 2012
Chicago IL
U.S. Marine Highways Committee (SOCP)

- Formerly the Marine Highways Cooperative (Short Sea Shipping Cooperative)

- Membership composed of:
  - U.S. based vessel operators and organizations that support vessel operations
  - U.S. Maritime Administration (MARAD), Sponsoring Agency,
  - Industry
  - Labor
  - Government

- SOCP’s overall objective is to improve the competitiveness, productivity, efficiency, safety, and environmental responsiveness of U.S. vessel operations
Marine Highways Committee (SOCP)

Mission Statement

- promote innovations to improve transportation via Americas Marine Highways

- identify freight movement improvements utilizing Americas Marine Highways research and development.

- support the introduction of America’s Marine Highways programs that are consistent with national defense needs where applicable.

- To inform and educate all interests, including corporate, state, local and public in the need of marine highways.
U.S. Flag Waterborne Domestic Trade

- U.S. Domestic Trade is regulated by the Jones Act - the U.S. maritime cabotage law

- The domestic trades serve 41 states and 90 percent of the population.

- Over 1 Billion tons annually (1/4 of Nations Freight) – mostly bulk products*

- U.S. Domestic Fleet – 40,000 vessels, $30 Billion (mostly tugs and barges)*

- sustains nearly 500,000 jobs, $29 billion in labor compensation, and more than $100 billion in annual economic output **

*(Statistics: MARAD Economic Impact of the U.S. Jones Act, April 2006)  
**a study by PricewaterhouseCoopers
Major Cargos – Domestic Marine Highways

• Grain, coal, and other dry-bulk cargos and crude and petroleum via inland rivers.
• Iron ore, limestone and coal across the Great Lakes.
• Refined petroleum products along the East and Gulf coasts.
• Supplies for Gulf offshore operations.
• Merchandise and construction materials to and from Alaska, Hawaii, Puerto Rico, and Guam.

* American Maritime Partnership
Domestic trade to Alaska, Hawaii and Puerto Rico dominated by Containerized cargoes

220 ferry operators based in 41 U.S. states and territories transport an estimated 90 million passengers
The Jones Act ensures that the United States has the vessels, seafarers and shipyards necessary to protect the national security of the country, and for use in time of war or national emergency.

All vessels engaged in domestic waterborne commerce between two ports in the United States must be:

- Built in the United States
- Owned by a U.S. citizen
- Documented under U.S. Law (U.S. Flag)
- Crewed by U.S. citizen seafarers
Environmental Impact Benefit

Container Capacity Comparison – 456 Containers

1 Barge Tow carries 456 containers

228 Rail Cars carry 456 containers

456 Trucks carry 456 containers

Fuel Efficiency

Ton-miles per Gallon of Fuel

- Truck Freight: 155
- Railroad: 413
- Inland Marine: 576

Ton-miles/gallon shows how far each mode moves a ton of cargo for every gallon of fuel consumed.
“The Driving force” - A Perfect Storm is Forming: Transportation Capacity & Congestion

“A Looming Threat to our Economic Prosperity”
America’s Marine Highways
One answer to the looming transportation Crisis

* Increasing trade and the demand for freight transport
* Traffic congestion
* Capacity constraints
* Environmental concerns
* Higher Fuel costs
* Declining truck fleet inventories
* Driver Shortages
* Hours of Service (HOS) reduction 2013
* Long Haul shift to intermodal

* U.S. Department of Transportation policy:
  America’s Marine Highways as one answer to the transportation crisis
FHWA Freight Congestion Projections
Updated 2010

Annual Average Daily Freight Truck Traffic in 1998

Projected Annual Average Daily Freight Truck Traffic in 2020
FHWA - Freight Congestion Projections

Average Daily Long-Haul Freight Truck Traffic on the National Highway System: 2040

National Highway System Routes
- Interstate
- Non-Interstate

FAF Truck Volume/Day
- 50,000
- 25,000
- 12,500

Note: Long-haul freight trucks typically serve locations at least 50 miles apart, excluding trucks that are used in movements by multiple modes and mail.
Note: Highway & Rail is additional highway mileage with daily truck payload equivalents based on annual average daily truck traffic plus average daily intermodal service on parallel railroads. Average daily intermodal service is the annual tonnage moved by container-on-flatcar and trailer-on-flatcar service divided by 365 days per year and 16 tons per average truck payload.

Key Government Milestones
Development of U.S. Marine Highways

• 2002 - 1st Short Sea Shipping Conference (MARAD)

• 2003 - Short Sea Shipping Cooperative (SCOOP) - Later renamed Marine Highways Cooperative

• 2007 - February 15 - Congressional Hearing - Development of Short Sea Shipping

• 2007 - Energy Act of 2007 - Requires Federal Govt to establish programs to identify and support development of Short Sea Transportation; Short Sea Transport eligible for CCF

• 2008 - Committee on Transportation & Infrastructure Roundtable - develop strategies to expand short Sea Initiatives

• 2009-10 - $39 Million Grants Awarded to U.S West Coast & Gulf

• 2010 - Aug. 11 - DOT announces designation of Marine Highway Corridors and awards $7 million in Grants for project development
Key Government Milestones
Development of U.S. Marine Highways

• 2011 - April - U.S. DOT/MARAD Americas Marine Highway Report to Congress


• 2012 - Feb. - MARAD - River System Purpose Built Study to be released.

• 2012 - March - U.S. Navy/MARAD presents Dual-Use vessel studies to the U.S. Maritime Industry as a new policy, legislative, programmatic initiative to get Dual-Use U.S. Marine Highways built

• 2012- March/April - America’s Marine Highway - Environmental Review Project in Five Major Regions - Public comment

• 2012 - June - MARAD release of Marine Highway Initiative studies along the U.S. East and West Coasts and the Mississippi River.
Marine Highways
No longer what we thought 10 years ago

• Major shift of International supply chain logistics

• Shipper Distribution centers extended to more diversified geographic locations lessening service interruptions risk

• Trans-loading of 20’ & 40’ international containerized cargo to domestic 53’ containers now SOP

• Long Haul, Domestic Intermodal preferred - Trucking Sector now largest customer of R/R Intermodal

• increased domestic intermodal demand an integral part of logistics industry long term Strategic Plans

• Truck HOS; Driver Shortages; Driver Culture Changed
What’s on the Horizon?

- Marine Transportation System National Advisory Council (MTSNAC) – Marine Highway Subcommittee recommendations to the Secretary of Transportation

- “64 Express” Service enters 2nd year of operations – sailing full with two (2) barges operating – moving 200-300 trucks off the road weekly

- New Green Trade Corridor – Stockton/Oakland service to commence Summer, 2012. 2 Barges 2X per week – 1,000 Trucks off the road per week

- U.S. Navy Dual-Use Marine Highway initiative – most promising initiative that may incentivize the building of up to 10 new U.S. Dual-Use vessels.
  - Marco Polo type startup assistance program

- 2012 – June – MARAD release of Marine Highway Initiative studies along the U.S. East and West Coasts and the Mississippi River

- 2012 – U.S. Gulf – Brownsville/Port Manatee service restart anticipated
Mission:

Develop a viable commercial vessel design as a Dual-Use Marine Highway vessel meeting USN RRF requirements for National Defense and Emergency needs

• Operational features compatible for U.S. Military Sea Lift needs and ready reserve capacity
  • Adequate Deck heights
  • Water tight stowage for CH-47 Chinooks,
  • A deck load of M-I Abrams tanks at 68 Short Tons
  • Quarters for force protection personnel,
  • Portable ramp capabilities
  • Long Range capability
  • Ability to load/discharge in “austere Ports”
MARAD AMH Dual-Use Design Study-Key Findings

• “A potential market for AMH services does exist” (2014 onward)

• Best routes with only two ports are more cost competitive than routes with multiple ports:
  1. Pacific Northwest and Southern California
  2. Delaware River or New York/New Jersey and Florida
  3. Texas to the west coast of Florida

• Study designs are “generic” & based on off-the-shelf technology

• Cost competitiveness can be enhanced by using existing designs

• Incorporate cost reductions available via technical support from overseas shipyards

• Government policies and support can have a major impact on the viability of AMH services
Marine Highways Dual Use study – Concept Designs (Partial)

Vessel Designs - RoRo

01-RoRo Small 18 kt
550’x89’x 58.7’ (168x27x17.9m)
Draft 19.8’ (6.0m)
71 Trailers, 80 Containers
RoRo 74,400 ft²
10,000 kW, Twin Screw w/ CPP

02-RoRo Trimaran 29 kt
673’x 133’x70.6’ (205x41x21.5m)
Draft 26.9’ (8.2m)
115 Trailer, 138 Containers
RoRo 106,023 ft²
76,500 kW, CPP, Pod, 2xWater Jet
Developed jointly with CSC

03-RoRo Medium 23 kt
682’x95’x77.4’(208x28.5x23.6m)
Draft 23.3’ (7.0m)
151 Trailers, 104 Containers
RoRo 130,820 ft²
28,000 kW, Twin Screw w/ CPP
Conclusions and Recommendations

- CCDOT Marine Highway System Evaluation Model facilitates:
  - Estimation of RFRs and sensitivity analysis for key vessel and route variables
  - Comparison of RFRs against prevailing market rates
  - Assessment of impact of potential policies on RFR

- For most of the routes examined, the services do not appear profitable at the expected market rates. Promising routes:
  - B2C, Delaware River to Jacksonville, Vessel 04 with reductions in fuel cost and no HMT
  - C1, Portland to LA, Vessels 05 and 13

- Route between Pacific Northwest and Southern California appears promising due to high prevailing market rates relative to east coast route(s)

- Externalities delta between AMH and truck or rail may justify policies to incentivize AMH

- Next step is to refine estimates of costs for feasible or near feasible routes
Example: Dual-Use Concept to Design Development – 2-1/2 Yrs.

STX Finland RoPax Design
M/V “COTENTIN” – built 2007
Modern State of the Art
Hull form - Low resistance
Proven in successful service
Proven Build/Shipyard Technology
transferable to U.S. Yards

“Enduro” Series
IML/STX #L10-052-601-01
Dual-Use
Dual Fuel: LNG/MDO
Hi-Capacity-Multi-modal RoRo
Marine Highway Vessel
Capacity 285 – 53’ Containers
1st Priority - Must Meet Shipper’s needs

“Just In Time “ - Voyage Speed Analysis

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European Cargo Handling Technology

RoRo Cassette cargo handling system
Containerized and/or Unitized cargoes Cassette System
“Double Container Stacking” Capability

Summary Benefits of a Cassette System

- High load capacity
- Short turn-around times
- Reduced lashing
- Optimized use of space
- Faster loading and unloading
- Lower occurrence of handling damage
- No load-securing labor
- Low operating costs
- Safer operation
- Pre-loading concept equalizes utilization of equipment and labor
RoRo Cassette Advantages

* Terminal efficiency: Cassette systems offer high capacity based on a high payload of the cassette..

* Reduced turnaround time in port allowing the terminal to handle more vessels per day.

* Storage efficiency: Due to the interlocking design, empty cassettes can be stacked five high.

* Maintenance efficiency: Cassettes have no moving parts such as tires, bearings, hoses, electrical wiring and lighting, so their running and maintenance costs are practically non-existent.
RoRo Cassette Advantages

Cassette Stowage 11-14% better utilization of deck space

The cassette system has a higher loading capacity than any other handling method.

Loading and unloading capacities for various methods:
- Cassette system 540 ton/h
- Roll trailer system 300 ton/h
  - Semi trailer 180 ton/h
- Forklift truck handling 30 ton/h
RoRo Cassette Advantages

• Operating efficiency: Traditional trailer systems typically require brake lines and electrical wires be connected and disconnected with each move.

• Vessel Design efficiency: Loaded cassettes are typically lower in height than traditional trailer systems. In addition, double stacking increases the efficiency of the cargo hold. The result is vessels designed around the cassette system can be reduced in height, resulting in less steel costs and better stability.
Design Achievements

- Proprietary Dual Use/Dual Fuel high speed American Marine Highway’s Ro/Ro ship design developed from existing proven and operating STX Europe vessel designs

- **Commercially competitive and commercially viable**


- “Enduro Design "Validated" as a Dual-Use Marine Highway Vessel – 2011 MARAD and CCDOTT independent studies

- RoRo Cassette cargo handling system – Provides High Capacity vessel utilization and low cost terminal operations

- Versatile Muti – modal design for: Dry, Reefer, Tank containers, trailers; cars, & other rolling stock; Oversize, overweight & hazardous cargoes

- LNG-Dual Fuel to provide for future ECA/EPA/IMO regulations
"The ENDURO ship design has militarily useful attributes that can be enhanced with the installation of National Defense Features (NDFs)"
Dual-Use Concept to Reality??

- 1st Developed Route-Four (4) ships planned. Anticipated Shipbuilding Contract- mid-2013; 1st ship Delivery 2016

- MOU with South Jersey Port Corporation

- Ship Management/Technical services MOU in place with Crowley Marine.

- Additional M-95, M5, M10 Long haul routes under development with potential for additional 6-8 ship orders
Marine Highways Public/Private Benefits

BETTER UTILIZATION OF AMERICA’S MARINE HIGHWAYS WILL:

- Reduce traffic congestion in major corridors
- Improve air quality in urban areas
- Minimize infrastructure expansion and maintenance costs
- Improve highway safety in major corridors
- Reduce hazardous cargo risks in densely populated areas
- Conserve energy resources
- Provide additional future surface transportation capacity needed to sustain our nations economic growth
Advantages of Marine Highways
To Shippers and Logistics Providers

• Natural “ready to use” Marine Highways - No Congestion. Unlimited Capacity

• No maintenance required by Federal or Local Govt. DOT Budgets – Credits?

• No Highway taxes or tolls for intermodal leg – Cost Savings

• Reduction in truck equipment maintenance cost – Cost Savings

• Environmentally friendly – potential for carbon credits

• Transit times equal to or better than existing surface modes

• Additional intermodal capacity to counter looming capacity shortage

Business Sustainability

• Reduces Highway accident exposure to logistics providers.

• Provides alternative transportation options – Highway or Bridge Closures
Major Barriers

• No “Un-met Consumer Demand” today!

• Adequate truck and rail capacity exists today

• No incentive today for shippers to commit to the “unknown”

• A disconnect between shippers needs today and the need to plan for the future today!

“Timing is everything” (3-4 Years to build 1st Intermodal ship)
Thank you!! 😊

Mark Yonge, Chairman
Marine Highways Committee (SOCP)
Email: mhc@socp.us
Phone: (Direct) 1+954-889-6852
Direct email: mark.yonge@intermodalmarine.com