MARPOL ANNEX VI- Emission Control Area Regulations

Impact on United States and Canadian Cruising
Fuel Availability & Price

Overview

• Availability varies by port
  ✓ Many ports not supplying

• Quality varies widely by port
  ✓ Some ports very low viscosity product.

• Premium charged varies widely
  ✓ $50 - $250/MT for LSFO

• Requires planning and contracting where possible

• Some routes are still not available
  ✓ South Pacific routes to West Coast are most difficult
Analysis:

• Northern Europe was the “reference case” for North America ECA
  - Market is historically supplied with lower sulfur IFO
  - Function of local crude oil & refineries, not regulations
  - Product is generally available throughout region.
  - Premiums for 1% IFO typically traded $40 - $50/MT
Fuel Availability & Price – West Coast

(source: bunkerworld)

Vancouver, B.C.
- Product is available if contracted
- Low viscosity blend of fuels
- Premium > $200/MT

Los Angeles, California
- Product is available contracted & spot
- Mix of fuel blends
- Premium $100 - $150/MT
Fuel Availability & Price – Gulf Coast

(source: bunkerworld)

Houston, Texas
• Product is usually available
• Premium $80 - $100/MT

New Orleans, Louisiana
• Product is usually available
• Premium ~$100/MT
Fuel Availability & Price – East Coast
(source: bunkerworld)

New York, New York.
• Product is available spot & contract
• Premium $40 - $60/MT
• Most like Europe

Freeport, Bahamas
• Product is available if contracted
• Premium ~$60 - $80/MT
Fuel Quality Issues (source DNVPS)

- Significant increase in bunker quality alerts in the United States since ECA
- Mostly high levels of Al & Si (abrasives) & density related issues
- Suppliers are struggling with quality control while blending to new spec
• Looking toward 2015 ECA level of 0.1%, the main quality concern is flash point.
• Safety requirements for ships requires a higher flash point than automotive diesel
• Already seen a significant decrease in typical flash point supplied.
Other Options?

• Advanced Emissions Purification Systems / (Scrubbers)

• Alternative Compliance Methodology / (Averaging & Exemptions)

• Alternative Fuels

• Modified Deployments