Sustainable Waste Management on board Ships
On the example of AIDAstella

Lecture No. 100 by Jochen Deerberg
Owner & CEO, Deerberg-Systems

Conference Partners
1756  Founded as a Blacksmiths Shop
19th Cent.  Hardware Store
1930-1960  Extension to a leading middle-sized department store company
1935  Oil- and Fuel-Trading
1948  Deerberg Electronics
1949  Deerberg Hotel
until 1951  Deerberg production and sales of agricultural machinery
1961  Jochen Deerberg disengages himself from the Deerberg Corporate Business
1965  and starts at Company Merkel in Hamburg
1974  Becomes Manager at AEG, Oldenburg
      (Branch with 10.000 employees)
1979  Jochen Deerberg starts his own entrepreneurial activities Deerberg Systeme Consultancy
1983  Deerberg-Systems: Waste Management for ships
1985  Deerberg-Trading: Interior outfitting equipment
2012  Deerberg-Systems Offshore Division established
2013  DEERBERG is worldwide leading supplier
      for Environmental Protection Systems on ships:
      177 Passenger Vessels, 78 Navy Vessels, 28 Yachts, 20 Offshore Vessels and more than 650 Merchant Vessels equipped.
      Main Order Book: 35 Vessels!
177 Cruise Vessels
78 Navy Vessels
28 SuperYachts
650 Merchant Vessels
20 Offshore Vessels
WHEN DEERBERG STARTED, MARINE WASTE MANAGEMENT WAS LIKE THIS

“Out of sight out of mind”
A sustainable Waste Management is only one part of the AIDA Environmental Concept.

**EFFICIENT WASTE HANDLING SYSTEM, 28% RECYCLING QUOTA**

**INVESTMENT:** 10 Mio. € installed = 1-2% of the ship newbuilding costs
DAILY WASTE AMOUNT
3.300 Person on AIDAstella
Technological Development
Deerberg Continuous Innovation

- Oil Barrel
- Stiff Grate
- Movable Grate
- 1st Private Environmental Workshop
- Flue Gas Cleaning
- Plasma Technology
- Integrated Dryer
- DEVATEC® Combi Continuous
- Deerberg Converter®

1960
1990
2000
2013

- Out of sight out of mind
- Sewage Treatment
- Chute System
- Pulper System
- DEVATEC
- Environmental Workshop II
- AWT Workshop
- DEVATEC® Combi
- Flue Gas Economiser
- DEVATEC® Metal Detector

Initiated by Deerberg
Deerberg Innovations 2013

• DEVATEC® Combi Continuous
• DEVATEC® Metal Detection
• CONVERTER® - The Deerberg Incinerator Alternative

DIA - THE DEERBERG CONVERTER®....
... can treat all kinds of unsorted waste
... provides volume reduction up to 80%
... delivers a dry and sterile end-product
... can be operated 24hrs – everywhere, especially in ports & coastal areas

Deerberg Innovations
Food Waste & Incineration
WHY ONBOARD TREATMENT?

- Insufficient Facilities and Logistics in most cases!
  - Cruise ships have often better facilities on board than the receiver (must be seen on an international level)
- Where and how to treat tons of problematic waste?
  - Biosludge, Food Waste, Contaminated Waste
  - Cruise ship operator is liable to the end

TREATMENT ON THE SHIP

- State-of-the-art Equipment
  - Waste Management Systems operating acc. to highest international standards
- High Technology available
  - Comparable to German land-based standards (energy recovery, flue gas cleaning acc. to BlmschV.17 ➔ Not installed as rules and benefits are missing

TREATMENT ON SHORE

- Insufficient Facilities and Logistics in most cases!
- Where and how to treat tons of problematic waste?
- Cruise ship operator is liable to the end
Waste Management and Incineration in particular are an essential part of the on board Health & Safety measures.
• International Rules (IMO),
• Local Rules (Alaska, HELCOM)
• Cruise Industries/AIDA’s Own Standards
  (Company Philosophy, Environmental Officers, Environmental, Health & Safety)
• Public Perception & Repeat Customers
• Competition between Cruise Companies
• Cruise Industry acts as a “role model”
• Suppliers like Deerberg
Compared to 40 years ago

≈ 100 MILLION TONS

of Solid & Liquid Waste

are not dumped into the oceans by ships every year

Based on 50,000 Cargo Ships with 20 persons and 300 Cruise Ships with 2,000 persons on board
• Over 90% of the world’s trade is carried by sea!

• About 2.7% of the global CO₂ emissions in 2007 was emitted by international shipping!

(Source Second IMO GHG Study 2009)
Stricter rules and regulations and the need to continuously innovate the product are a permanent challenge and motor for the marine industry!
The Challenge is still on!

We have already achieved a lot, but we have still some way to go!