



**NTSB** National Transportation Safety Board

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*Office of Marine Safety*

## **Maritime Trades Department Executive Board Meeting**

Member Debbie Hersman  
February 27, 2009

# NTSB

- Independent Federal Agency
- 5-Member Board
  - President appointed, Senate confirmed
- 400 Staff
- Investigates accidents in all modes of transportation
- Determines probable cause
- Issues/Implements recommendations

# Safety Recommendations

Issued Since 1967

TOTAL = 12,536

Pipeline 1225 (9.8%)



Marine 2307  
(18.4%)



Intermodal 229 (1.8%)

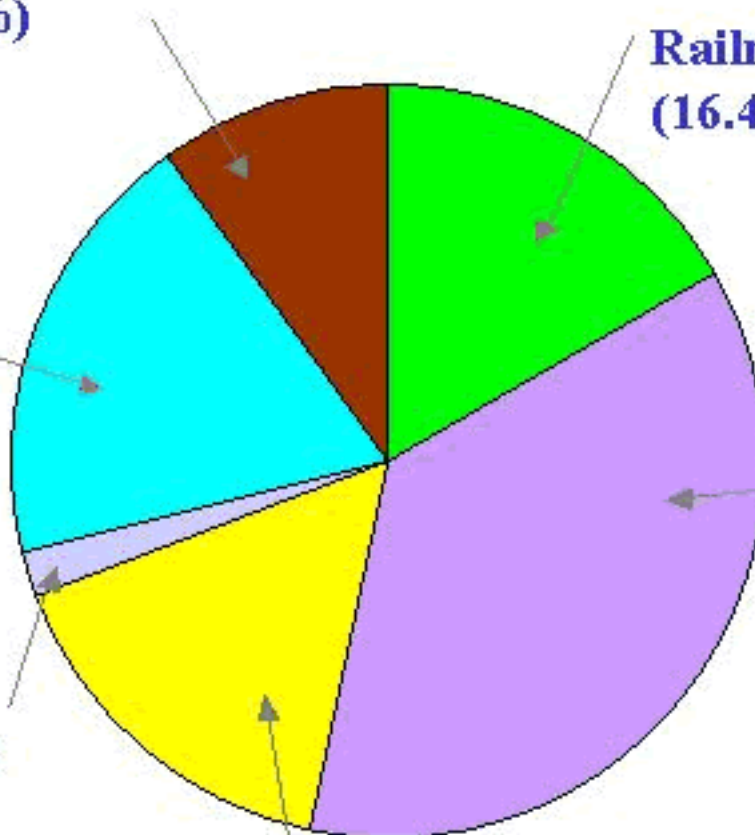


Highway 2069 (16.5%)

Railroad 2053  
(16.4%)



Aviation  
4653  
(37.1%)

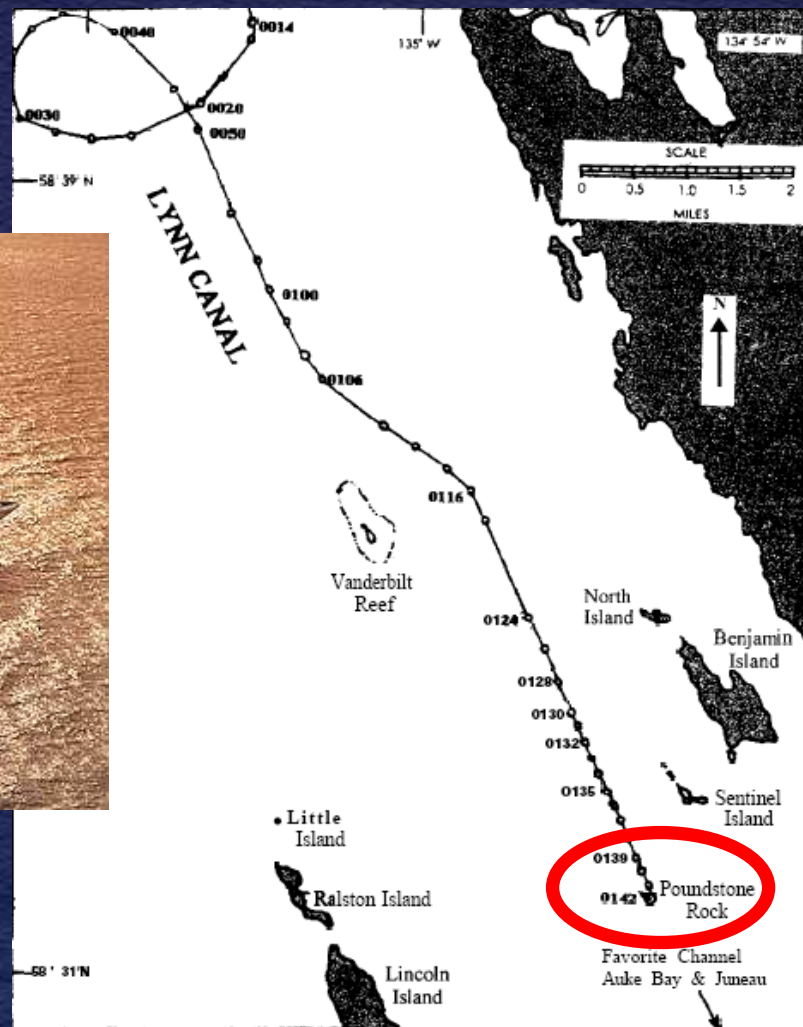


November 2006

# Safety Board Fatigue Recommendations

- 30 aviation recommendations
- 17 highway recommendations
- 19 marine recommendations
- 39 rail recommendations
- 4 pipeline recommendations
- 4 intermodal recommendations

# Lynn Canal, AK June 23, 1995



NTSB



# Lynn Canal, AK June 23, 1995

## Fatigue Indicators

- Sleep apnea
- Recent work rest history
- Circadian factors
- Failure to take actions to avoid collision
- Lack of awareness of collision

## Evidence Sources

- Post accident sleep study
- Pilot interview
- Time of day
- Vessel recorders

# Recommendations

- **M-99-1**
- Work-hour limitations date to early 1900s
- International Maritime Organization
- Crew Endurance Management System (CEMS)
- 2007 staff briefing





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**Allision of Hong Kong-Registered  
Containership M/V *Cosco Busan* with  
the San Francisco–Oakland Bay  
Bridge**

**Nov 07, 2007**



# Accident Site



# M/V Cosco Busan



© Jan Svendsen

- Type: Container
- Length: 901 ft
- Breadth: 131 ft
- Draft: 40 ft
- Crew: 23

# Bay Bridge

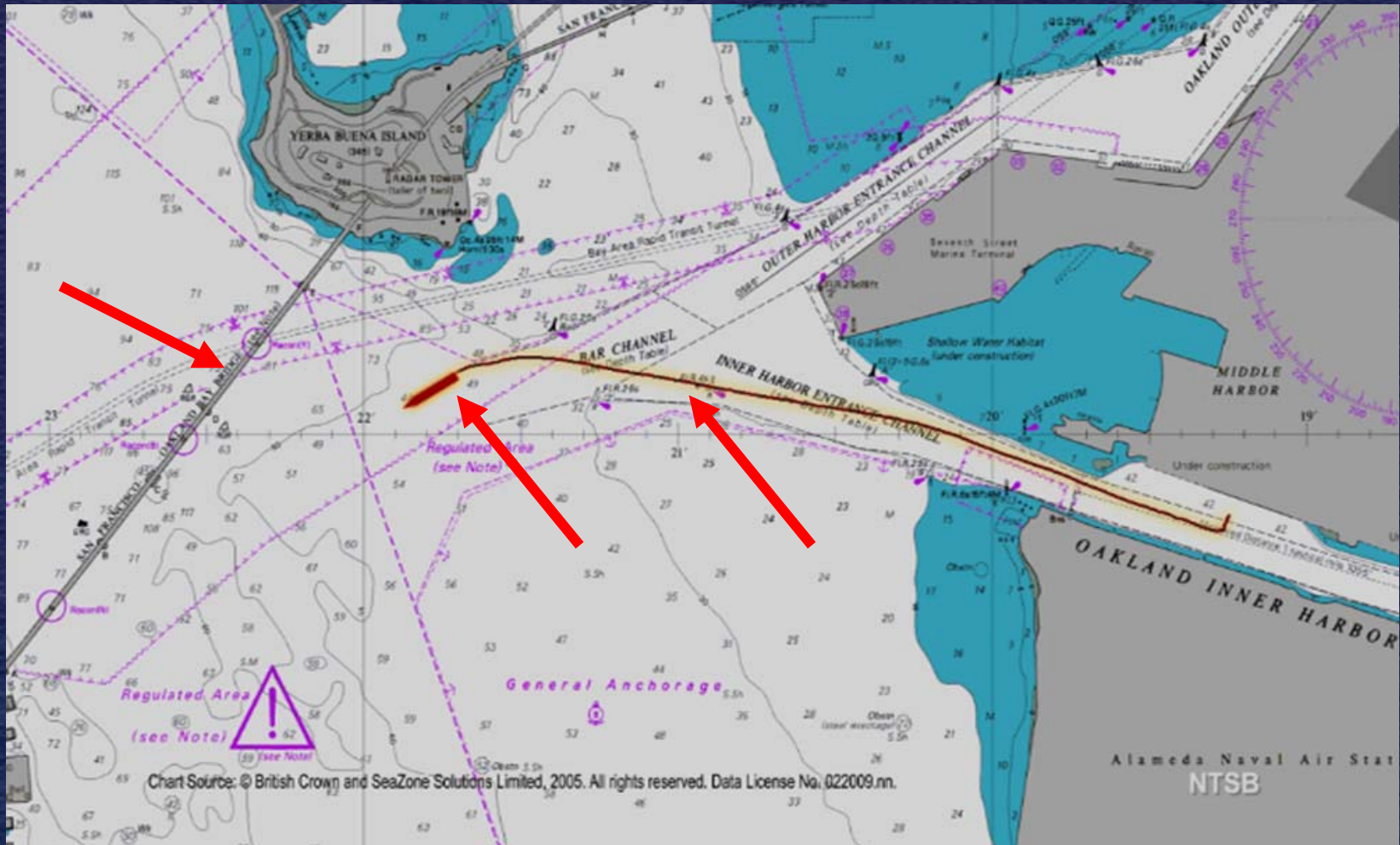


- Built: 1936
- Traffic: 280K/day
- Length: 4.5 miles
- D–E Span: 2200 ft

# Bridge Approach

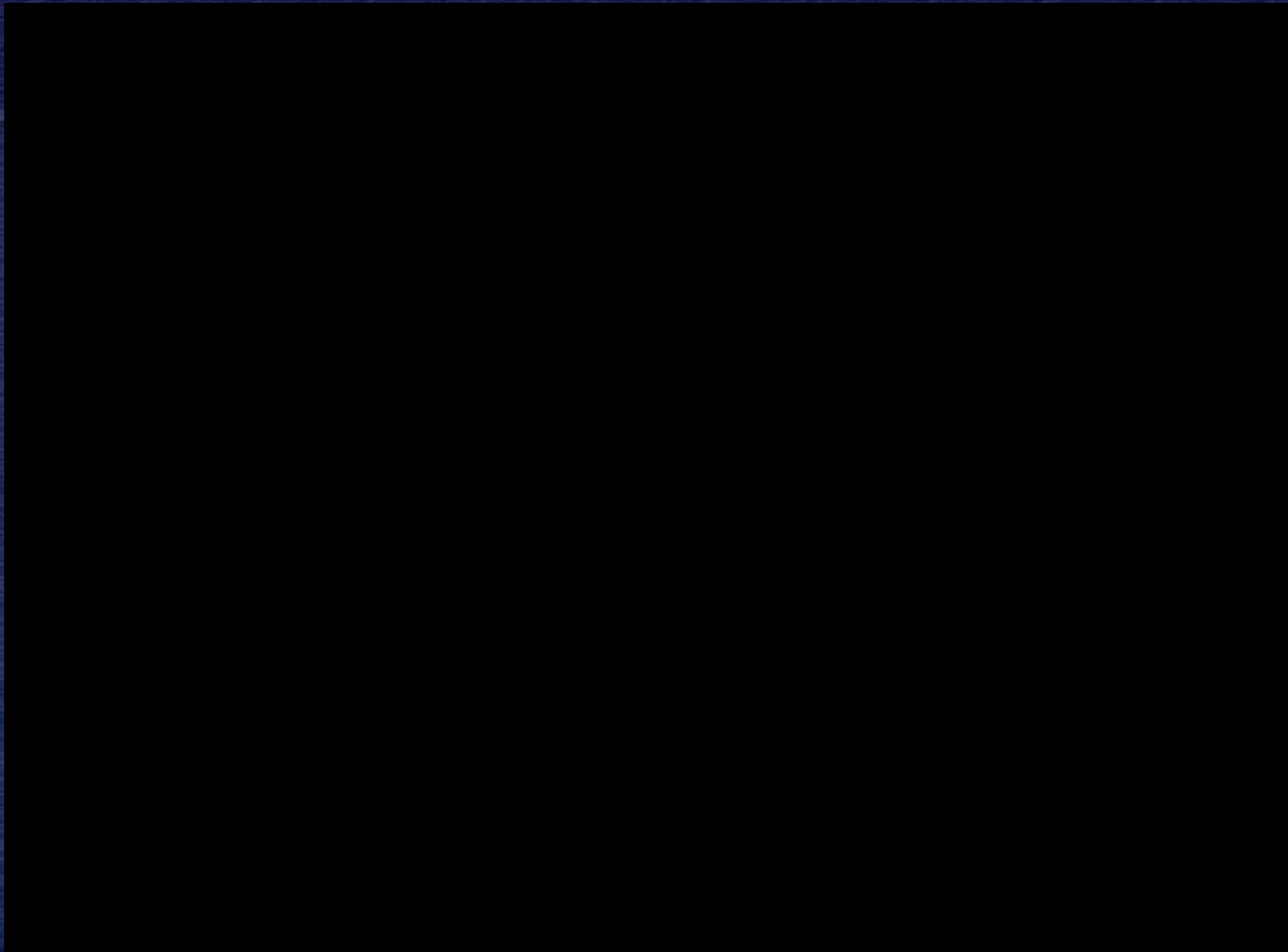


# Accident Animation – 20 X

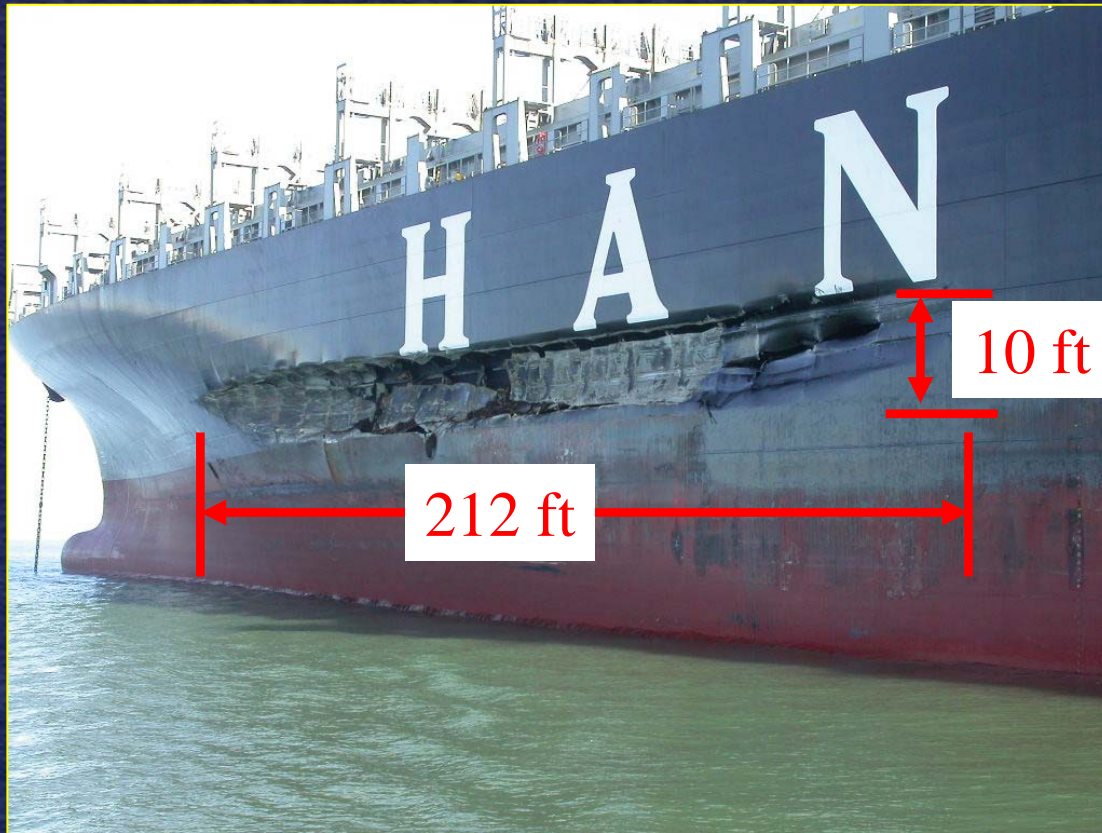


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# Damage to M/V Cosco Busan



Damage: \$2.1 M

Size: 220 ft x 14 ft

Spilled: 53,500 gal

# Damage to Bay Bridge



Damage: \$1.5 M



# Safety Issues

- Medical oversight of pilot
- Medical oversight of mariners
- Guidance for vessel traffic service
- Procedures for improving the assessment of oil spills
- Training and oversight of ship's crew



# Probable Cause

- Pilot's degraded performance due to impairing prescription medication
- Lack of pre-departure master/pilot exchange and lack of communication between master and pilot
- The master's ineffective oversight of pilot's performance and vessel's progress

## Contributing....

- The ship's operator failing to properly train and prepare crew members prior to accident
- The U.S. Coast Guard failing to provide adequate medical oversight of pilot



LIVE  
SKYCAM





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