



**NTSB** National Transportation Safety Board

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*Office of Marine Safety*

# Influences on Master and Pilot

# Master's Errors

- Not aware of pilot's passage plan
- Did not engage in master/pilot exchange
- Did not understand the pilot's question about the symbols on the electronic chart
- Did not recognize that the ship was headed toward the Delta tower

# Likely Influences

- Experience
- Language
- Culture
- Perceived pilot attitude

# Experience

- Master had 10 years of experience in command and working with pilots, including U.S. pilots
- Master had never captained a vessel out of San Francisco
- This was the master's first voyage on the *Cosco Busan* without supervision by the company's superintendent
- The master and crew were still relatively new to the ship, each other, and Fleet Management.
- Pilot spent 26 years piloting vessels in San Francisco Harbor

# Language

- Master and crew operating in native English language environment
- Master conversant in English, but not a native English-speaker
- Language differences impeded master's ability to communicate with pilot

# Culture

- Cultures differ in certain key dimensions
- Asian cultures found to perceive greater differences in status or power between superior and subordinate than Western cultures
- Asian language and culture not unusual for crews in San Francisco

# Master/Pilot Interaction

- VDR recorded professional but limited discussion between pilot and master
- Pilot and master can be heard attending mostly to their own areas of responsibility
- Pilot asserted that presenting pilot card, stating that he would answer questions, was sufficient to provide information to master
- The master did not inquire about the intended route or precautions to take because of reduced visibility
- Minimal interaction between master and pilot once the ship was under way

# Experience

- Disparity in experience increases likelihood that senior but less experienced person will defer to subordinate
- Master was superior to pilot on vessel but pilot was experienced in San Francisco Harbor
- Blurring and reversal of roles

# Summary

- Considerable disparity in experience in San Francisco Harbor
- Language and cultural factors
- Perception of pilot's attitude
- Lack of effective communication
- Master deferred all navigation planning and execution to pilot
- Master played little or no role overseeing pilot

# Pilot's Errors

- Inability to interpret “red triangles”
- Failed to release tug
- Inability to interpret radar images
- Failed to detect RACON
- Failed to effectively query VTS
- Failed to integrate available information

# Potential Antecedents

- Experience
- Training
- Navigation equipment design,  
and/or
- Physiological or behavioral issues

# Experience

- 26 years of experience as a San Francisco pilot
- He had piloted all types of ships:
  - In all likely environments
  - With all likely vessel bridge components
  - With vessel crewmembers of diverse cultural, language, and experiential backgrounds

# Training

- Likely an issue with operators with limited experience
- Trained in radar interpretation and BRM

# Equipment Design

- Likely an issue with operators who have limited experience using the equipment
- Over time, experience with equipment will compensate for design deficiencies
- Pilot's 26 years of experience effectively ruled out equipment design as a factor affecting his performance
- Pilot relied on ship's crew for assistance in using bridge equipment

# Physiological or Behavioral Factors

- Permanent, e.g., hearing loss
- Temporary, e.g., fatigue
- Fatigue cannot be ruled out
- Medical factors – medical conditions & medication use cannot be ruled out

# Medical Factors

- History of medical conditions
- Numerous prescription medications with documented adverse effects on cognitive performance

# Previous Performance

- No information on factors affecting previous voyages
- May have committed errors previously

# Summary

- Extensive use of medications with known adverse effects on cognitive performance



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