Fire Aboard Small Passenger Vessel
Conception
Platts Harbor, Santa Cruz Island, 21.5 miles
South-Southwest of Santa Barbara, California
September 2, 2019

Managing Director’s Introduction

- Adam Tucker, Investigator In Charge
- Joseph Panagiotou, Fire/Explosions
- Marcel Muise, Survival Factors
- Andrew Ehlers, Operations
- Carrie Bell, Human Factors
- Bart Barnum, Engineering
- Kristyn Jeschelnik, Report Writer/Editor
Managing Director’s Introduction

- Morgan Turrell, Acting Director, Office of Marine Safety
- Liam LaRue, Chief of Investigations, Office of Marine Safety
- Rob Jones, Deputy Chief of Investigations, Office of Marine Safety
- Jim Scheffer, Program Management Officer, Office of Marine Safety
- Kathleen Silbaugh, General Counsel
- Kathryn Catania, Deputy Director, Office of Safety Recommendations and Communications
- Jim Ritter, Director, Office of Research and Engineering
- Scott Rainey, Safety Recommendation Specialist
- Dr. Mary Pat McKay, Chief Medical Officer

Accident Overview

Adam Tucker, IIC
On-Scene Team

- Board Member Jennifer Homendy
- Office of Marine Safety
- Office of Research and Engineering
- Office of General Counsel
- Office of Safety Recommendations and Communication
- Office of Transportation Disaster Assistance

Staff Who Supported the Investigation

- Benjamin Allen, GC-1
- Cyndi Lake, MD-6
- Deven Chen, RE-40
- Paul Suffern, AS-30
- Jeff Marcus, SRC-50
- Christy Spangler, SRC-60
- Rolando Garcia, MD-5
Staff Who Produced Virtual Board Meeting

- James Anderson, SRC
- Michael Anthony, CIO
- Deidre Esters, AD
- Keith Holloway, SRC
- Kelley Romeo, CIO
- Van Slovak, CIO
- Rahiq Syed, CIO
- Carl Perkins, AD
- John Whitner, CIO
- Brian Young, MS-10

Parties to the Investigation

- US Coast Guard
- Truth Aquatics, Inc.
- Santa Barbara Sheriff's Office
- Santa Barbara Fire Department
Conception

Truth Aquatics
Conception Accident Voyage

- Three-day dive trip
- 39 people on board:
  - 33 passengers
  - 6 crew
Map of Accident Area

Accident Events

• 11:00 p.m. September 1 – *Conception* at anchor
• September 2
  • 1:30–2:35 a.m. – Crewmember works in galley
  • About 3:00 a.m. – Same crewmember awakens and discovers fire
  • Salon fully engulfed
Accident Events (cont.)

• 3:14 a.m. – Captain made Mayday call
• Crew attempted to open forward galley window
• Port and starboard fire hose stations blocked by fire
• Skiff launched

Accident Events (cont.)

• 3:29 a.m. – Distress call from the Grape Escape
• Skiff returned to search for survivors
• Coast Guard launched response assets
Accident Events (cont.)

• 4:27 a.m. – First Coast Guard boat on scene
• 4:55 a.m. – Firefighting efforts begin
• 6:54 a.m. – Conception sinks

Salvage
Safety Issues

- Lack of regulations for smoke detection in accommodation spaces on small passenger vessels
- Construction requirements for means of escape
- Lack of a roving patrol
- Ineffective company oversight

Exclusions

- Weather and sea conditions
- Use of alcohol or other drugs by the deck crew
Cause and Origin of the Fire
Joseph Panagiotou
Fire/Explosions Group Chairman
Overview

• Fire damage to the *Conception*
• Determination of origin and cause
• Issues regarding the smoke-detection system

Fire Damage to the *Conception*

• The fire burned without intervention for about 1 hour and 40 minutes
• Fire suppression took an additional 13 minutes
• The *Conception* sank and became inverted
• Little material remained from the main and upper decks
Determination of Origin and Cause

- The wreckage was reconstructed by ATF, FBI, and Coast Guard
- The wreckage was laid out in sections representing each deck
- Could not determine origin area or cause of the fire from wreckage examination

Determination of Origin and Cause (cont.)

The determination of the origin and cause relied on:
- Interviews with the surviving crewmembers
- Examination of the similar vessel Vision
- Statements from previous passengers
Determination of Origin and Cause (cont.)

• Smoke rising along periphery of sun deck
• Fire at the base of the stairs to the sun deck
• Fire filling and blocking entrance way into the salon
• Fire filling aft part of salon and area of escape hatch
• Smoke and flames exiting portside salon windows

Determination of Origin and Cause (cont.)

• Crewmember statements identify the fire at the aft portion of the salon
• Crewmember statements exclude:
  The upper deck, the galley, the engine room, the lazarette, the anchor room and the shower room
• The occupied bunkroom is unlikely
Potential ignition sources in the aft portion of the salon:
- Electrical systems
- Charging batteries and devices
- Improperly discarded smoking materials
- Unknown

Ignition Time of the Accidental Fire
- The last crewmember in the galley and salon was at 2:35 a.m.
- Fire discovered approximately 30 minutes later
- The exact time of the ignition is not known
Smoke Detection

- T-boats are required to have smoke detectors in the passenger bunkrooms
- Smoke and hot products of combustion rise, making it difficult for them to migrate below deck
- T-boats are not required to have smoke detectors in the other accommodation spaces

Smoke Detection (cont.)

- Early fire detection is critical
- Smoke detectors in all accommodation spaces provide better coverage
- Had there been smoke detectors in all accommodation spaces, the fire would have been detected early
Survival Factors
Marcel Muise, Survival Factors Group Chairman
Safety Issues

- Two means of escape
- Adequacy of egress regulations
- Effectiveness of the bunkroom escape arrangement
- Coast Guard and municipal emergency response

Egress Path
Emergency Exit

- **Existing vessels** (Conception and vessels built before 1996)
  - Two avenues of escape
  - No prohibition on two exits into the same space
  - No requirements regarding size, escape times, vertical access, or obstructions

- **New vessels** (Built since 1996)
  - Minimum 32 inches
  - No prohibition on two exits into the same space
  - Number and size sufficient for rapid evacuation
Egress Configuration

- Climb ladder
- Crawl to center
- Stand
- Pull up through hatch

Smoke Inhalation

- Fire above the bunkroom
- Ventilation fans running
- Open stairway
Search and Rescue

- Coast Guard small boats and helicopter search
- County and city fire boats
- Commercial towing service
Operations
Andrew Ehlers, Operations Group Chairman

Safety Issues

• Roving patrol requirements
• Verification of compliance
• Safety management systems for small passenger vessels
Roving Patrol Requirement

• “Suitable number of watchmen to guard against and give alarm in case of fire or other danger”
  • Must patrol throughout the vessel
  • Required regardless of whether or not vessel is under way
  • Required at all times when passengers are embarked and bunks are occupied
  • Requirement well known in industry

Roving Patrol on the Conception

• All members of the crew asleep the morning of the fire
• No roving patrol
• Fire well developed when second galley hand awoke
• Due to the advanced stage of the fire, crew unable to fight fire or aid passengers in evacuation
Regulatory Compliance

• Truth Aquatics Inspection Record
  • All vessels inspected annually
  • Only minor discrepancies in 5 years prior to accident
  • Vessels regularly operated without roving patrol

Regulatory Compliance

• Coast Guard inspections
  • No way to verify roving patrol requirement
    • Inspections not conducted at night or while passengers embarked
    • No logs or other records to verify compliance
  • Inspection aids do not include verification of roving patrol requirement
  • Since 1991, no citations issued or fines levied for failure to post a roving patrol
Safety Management System (SMS)

• Elements
  • Defines roles and responsibilities of all personnel
  • Standardizes procedures for normal operations and emergencies
  • Establishes safeguards against identified risks
  • Includes procedures for reporting accidents and nonconformities with SMS
  • Includes procedures for internal audits and management reviews of system

Safety Management System

• Truth Aquatics did not have, nor was it required to have, an SMS

• Company’s Loss Control Program included elements of SMS, but did not have:
  • Normal operating procedures for vessel
  • Requirement to develop procedures to prevent future occurrences of accidents
  • Company audit process
Human Factors
Carrie Bell, Human Factors Group Chairman
Safety Issues

- Training in Critical Areas
- Complacency and Normalization of Deviance
- Lack of Oversight
  - Responsibility beyond the COI

Training & Safety Critical Roles

Ensure crew’s knowledge of emergency duties

- Station bill duties
- Demonstration of skills
- Participation in fire drills
Passenger Safety Briefing

• Required to include:
  • Emergency exit locations
  • Demonstration of donning a lifejacket
  • Placards used in place of crew briefing
• Briefing conducted around 0900, 5 hours after departure

Complacency

• Lack of familiarization and training
  • No verification that policies were understood
  • Relatively inexperienced deckhands
  • Delayed handout of employee documentation
• Insufficient record-keeping
Complacency

- Navigation watches
  - Captains assigned deckhands to helm watches
- No roving patrols
- Complacency can lead to normalization of deviance

Normalization of Deviance

- Desensitized to non-standard practices
- Degradation of performance
- Occurs over time
- Can lead to unintended consequences
Oversight

- Company was known in the industry as reputable; however, they demonstrated—
  - Poor overall safety culture
  - Lack of involvement

- Good safety management requires top-down commitment