Managing Dive Accidents from the USS Oriskany Dive Site

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Thanks

- Pensacola Dive Boat Captains
- Pensacola Dive Shops
- Pensacola Chamber of Commerce
- US Coast Guard
- Baptist Hospital Hyperbarics
- Baptist Life Flight
- Navy Operational Medicine Institute
- Florida Fish and Wildlife Commission
- NEDU and NDSTC
- Divers Alert Network
Pensacola - a Great Place to Dive Just Got Better!
USS Oriskany - CVA 34

- Commissioned in New York in 1950
- Carried up to 100 combat aircraft
- Brought POWs home from Hanoi
USS Oriskany Sinking 1

• Sunk as a dive site 24 miles southeast of Pensacola on 17 May 2006
USS Oriskany Sinking 3
USS Oriskany Dive Site

• Sunk in 212 feet of water
• Sitting perfectly upright
• Had to have the shallowest part of the ship at least 55 feet deep for navigational clearance
• 888 feet long – the world’s largest man-made artificial reef
• Only place in US waters to see a carrier underwater
• Extremely popular dive site
I Dye THE "MIGHTY O"

The world’s largest artificial reef
Pensacola, Florida

ATTACK AIRCRAFT CARRIER
CVA-34 USS ORISKANY

Displacement: 27,100 t.
Length: 888'
Extreme Width: 147'6"
Draft: 31'
Depth: 60ft-212ft
Loc: 25mi SW Pensacola, FL
30.02.600 North Lat
87.00.400 West Lon
The Problem: What if there is a dive accident at the site?

- Two early fatalities
- DCS concern
- Better plan needed
What Do You Do?

• First Aid for the Diver?
• Oxygen
  • How to deliver?
  • How much do you need?
• Medications?
• AED?
Communications

Who do you call?

• 911?
• Coast Guard?
• Chamber?
• Navy?
• Divers Alert Network?

How do you call them?

• Cell phone?
• Ship-to-shore - what channel?
Communications

• What do you tell whoever you call?
• What chamber should the victim go to?
• How should he/she get there?
What Next?

Is a Coast Guard helicopter going to come and pick up the injured diver?
Should you call the Coast Guard and wait for a surface rescue on site? Transport to shore on the dive boat?
What Are the Key Points?

- First-aid oxygen on dive boat
- Having a plan
- Coordinating the plan
- Communications
- No avoidable delays to recompression
A Few Good Things to Know

- Cell phones do not work at the dive site
- The local EMS helicopter services will not pick you up at sea
- A Coast Guard helicopter might – but there are no air assets locally
- Many hospital do not have chambers.
- Many chambers do not treat dive emergencies
- Chambers that do treat dive accidents may have restrictions on what kind of patients they will recompress
Photo courtesy Dr. Andy Malbin
Oriskany Dive Accident Management Plan - Outline

• Speed is essential!
• First-aid oxygen on the dive boat
• Diver evacuated on own boat
• Notify USCG on Channel 16
• Coast Guard calls Escambia EMS (911)
• Transport back to Coast Guard pier
• Baptist Life Flight and ground ambulance meet boat at CG pier
• Transport to Baptist Chamber
Dive Boat Equipment and Training

- Ship-to-shore VHF-FM radio
- Cell phone as backup to ship-to-shore
- Rescue oxygen – 2 hour duration
- CPR training
- Note: Coast Guard vessel does not typically carry appropriate medical equipment and personnel to treat a dive accident.
First-Aid

- Remove diver’s gear
- Have him/her lie down
- Ensure open airway
- Start oxygen
- Patient assessment – rapid neuro
- Close monitoring
- Secure diver’s equipment for later analysis
First-Aid Oxygen

- Essential first aid for DCS/AGE patients
- Also very useful in near-drowning victims
- May result in improvement of symptoms – recompress anyway for DCS/AGE
- 2-hour capability (120 cubic ft)
  - High inspired oxygen fraction – demand valve or reservoir mask
  - Oxygen clean or fitting compatibility issues if using scuba bottles with O2
- Rebreathers – can obtain high oxygen fraction in rigs and use for first-aid oxygen
DAN Extended Rescue Oxygen or Equivalent
Trained First-Aid Oxygen Provider
What about AEDs?

- Automated external defibrillators
- Important for primary cardiac events
- Limited efficacy after 10 minutes of cardiac arrest
- Very limited data on success in AGS/DCS patients in cardiac arrest
- Probably not reasonable for dive boats – expense and wet conditions
- Not in CG equipment list for rescue vessel
How do you get all the divers back on board quickly?
Expediting Transport

• Dive planned such that all divers back on boat at approximately same time
• No diver recall devices – Dive Boat Captain concern diver safety
Expediting Transport

Transit time back to shore varies from about 50 minutes to over 2 hours depending on the dive boat.

Sea Phantom
GPS Numbers for Coast Guard Pier

- N 30-20-67
- W 087-17-40
Who Has the Lead?

• Clear understanding of responsibility is critical
• Dive Boat Captain has lead initially
• Coast Guard is overall Search and Rescue Mission Coordinator.
• This does not diminish Dive Boat Captain’s responsibility to his divers.
• EMS director has the lead once casualty is on board the Baptist Life Flight helicopter or ground ambulance.
First CG Communication

• Name and location of vessel
• Name, age, and sex of accident victim
• Dive profile: Depth/time; gas mix; time of surfacing; omitted decompression?
• Presenting signs/symptoms
• Current status
  • Conscious?
  • Breathing difficulty?
• Pain? Where
• Weakness/paralysis? Where
• Sensory loss? Where?
Coast Guard Watch Will:

• Call Escambia County (Florida) 911 and notify them of a dive accident
• Call Naval Air Station Pensacola and notify them of the dive accident and that there will be an aircraft arriving
• Ensure Coast Guard Station access gate is open
Escambia County EMS

- Notifies Baptist Life Flight
- Dispatches ground ambulance
EMS Entry – Baptist Life Flight

- Primary transport platform
- Must be requested by Escambia EMS
- Ambulance is back-up transport
Transfer of Dive Accident Victim at Sea

- CG may respond if not out on another call
- May entail a significant time delay
- Potentially hazardous
- Indicated ONLY if it will significantly decrease time to recompression for victim AND sea state allows
- Best-qualified medical person and first-aid oxygen stay with patient
Which Chamber for Treatment?
Baptist Hospital in Pensacola has two monoplace chambers

Only chamber in Pensacola with an ER and a 24-hour bends watch

Can do two treatments simultaneously if needed

24-hour Emergency Department

May not recompress a critical patient

Associated air ambulance service
Alternate Chambers

- Springhill Hospital, Mobile
  - Two-person chamber
  - Will do critical patients
  - Next closest
- Capitol Regional Med Ctr - Tallahassee
  - Multiplace
  - Will do critical patients
  - May be out of Life Flight range
Second CG Communication

- Longer and more detailed
- Per Coast Guard checklist
Emergency Contact Numbers

• Baptist ER and Hyperbarics
• Baptist Communications Center
• Coast Guard
• Divers Alert Network
• Escambia County EMS
• Naval Air Station Pensacola
• Navy Experimental Diving Unit
• Navy Diving and Salvage Training Ctr
• Springhill and Tallahassee Chambers
Getting the Plan Out

- Pensacola Dive Boat Captains
- Pensacola Dive Shops
- Pensacola Chamber of Commerce
- US Coast Guard
- Baptist Hospital Hyperbarics
- Alternate Chambers
- Baptist Life Flight
- Florida Fish and Wildlife Commission
- NEDU and NDSTC
- Divers Alert Network
Questions?