



Managing Dive Accidents from the USS Oriskany Dive Site



Frank Butler, MD
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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 2





USS Oriskany Sinking 3





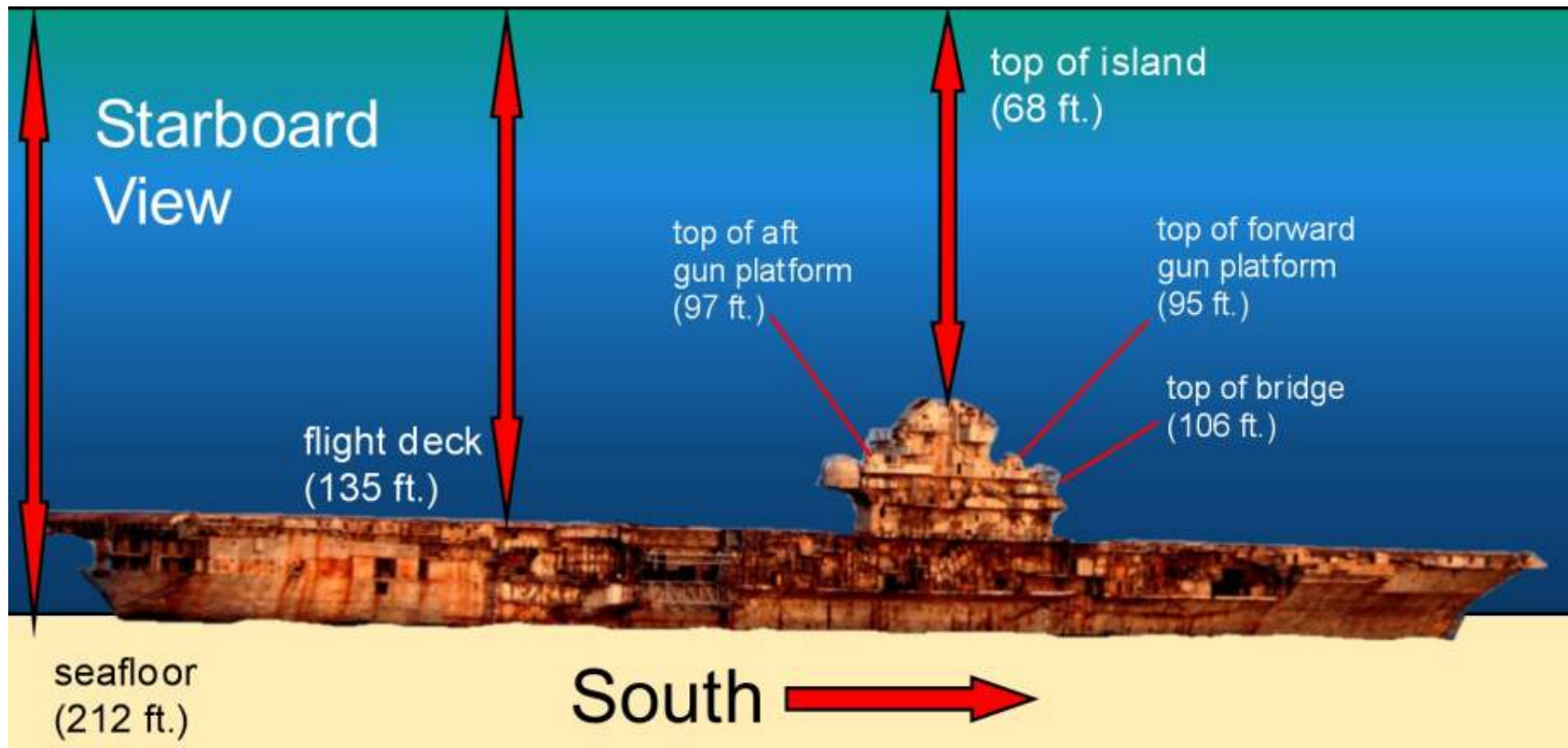
USS Oriskany Dive Site

- 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





USS Oriskany



- Only place in US waters to see a carrier underwater
- Extremely popular dive site

I Dove THE "MIGHTY O"

The world's largest artificial reef
Pensacola, Florida

Pensacola

USS ORISKANY

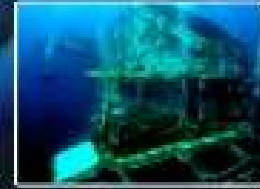


ATTACK AIRCRAFT CARRIER
CVA-34 USS ORISKANY

Displacement: 27,100 t.
Length: 888'
Extreme Width: 147'6"
Draft: 31'
Depth: 60ft-212ft
Loc: 25mi SW Pensacola, FL
30.02.600 N Lat
87.00.400 W Lon

THE GREAT CARRIER REEF

U.S.S. ORISKANY



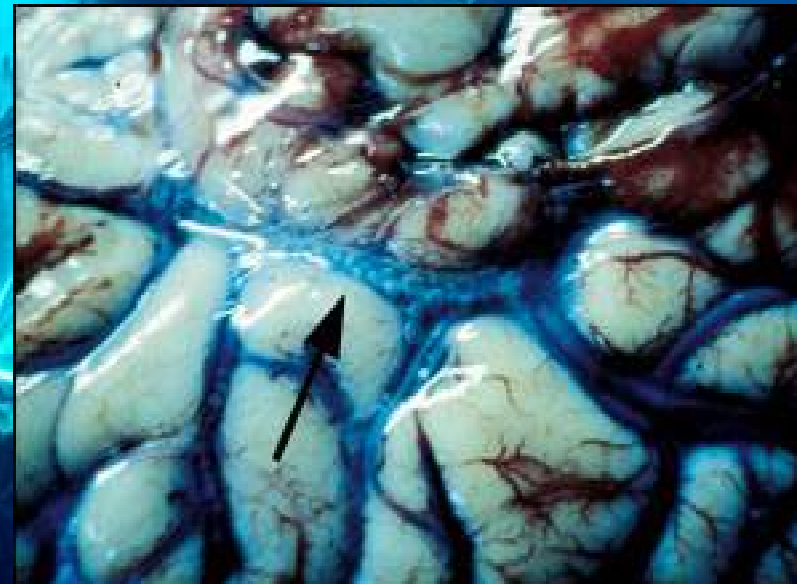
13 OCT 1945 - STILL SERVING





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**

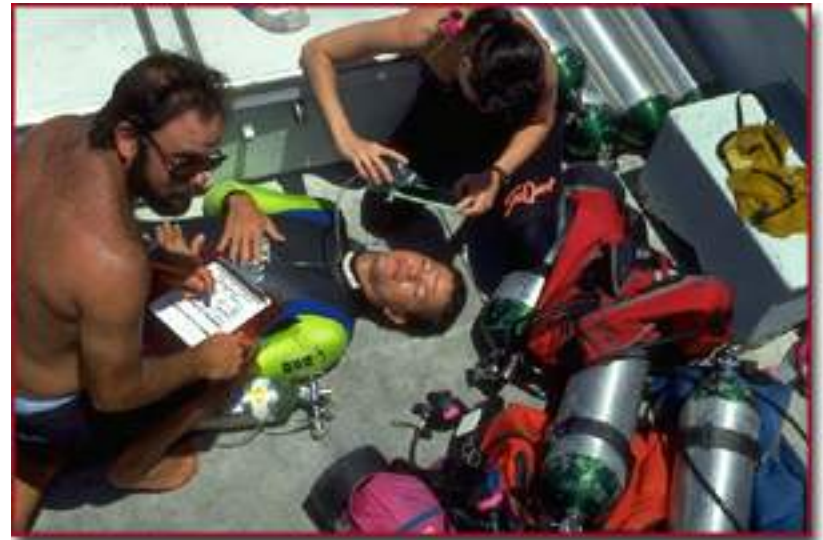
Dive Boat Equipment and Training

- 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?



Treatment Chamber

- 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?