



U.S. Navy Supervisor of Salvage and Diving NAVSEA 00C

2012-2013 Highlights

Hurricane Sandy

USS GUARDIAN

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SUPSALV's Mission – What We Do...

Underwater Ship Repair

(N43 & Customer Funded)

- ❑ Ship Design for Underwater Repair
- ❑ ~100 Operations Per Year
- Avoid need for emergency dry-dock*
- ❑ Up to 20:1 Return on Investment



Search & Recovery (N43 & Customer Funded)

- ❑ Air France Flight 447
- ❑ Minneapolis, MN Bridge Collapse
- ❑ Space Shuttle Columbia & Challenger
- ❑ Ehime Maru
- ❑ E-2C Hawkeye North Arabian Sea
- ❑ ~15 Operations Per Year



Ship Salvage, Towing, and Heavy Lift

(N43 & Customer Funded)

- ❑ USS PORT ROYAL (CG 73) Grounding
- ❑ Port of San Francisco Dry Dock (2013)
- ❑ Hurricanes Katrina & Rita (475 Ships Salvaged)
- ❑ USS COLE (DDG 67)
- ❑ ~20 Operations Per Year

Oil Spill Response (N45)

- ❑ Large Inventory Sized to Act as Tier II/III OSRO for Navy Ships/Facilities
- ❑ Emphasis on Transportability in Austere Environments
- ❑ Ex USS CHEHALIS Fuel Removal
- ❑ Hurricanes Katrina and Rita
- ❑ Operation Iraqi Freedom
- ❑ Deepwater Horizon Oil Spill

Diving/Certification (N87)

- ❑ USN Diving Manual & Decompression Table used worldwide
- ❑ Navy Experimental Diving Unit *One of a kind in the world*
- ❑ Equipment Development & Procurement
- ❑ Certification Authority for all of DoD



The Event:

October 29, 2012

90 mph winds

The Mission:

Dewatering

The Problem:

The transit tunnels were 100-185 feet below the surface; each tunnel with millions of gallons of water.





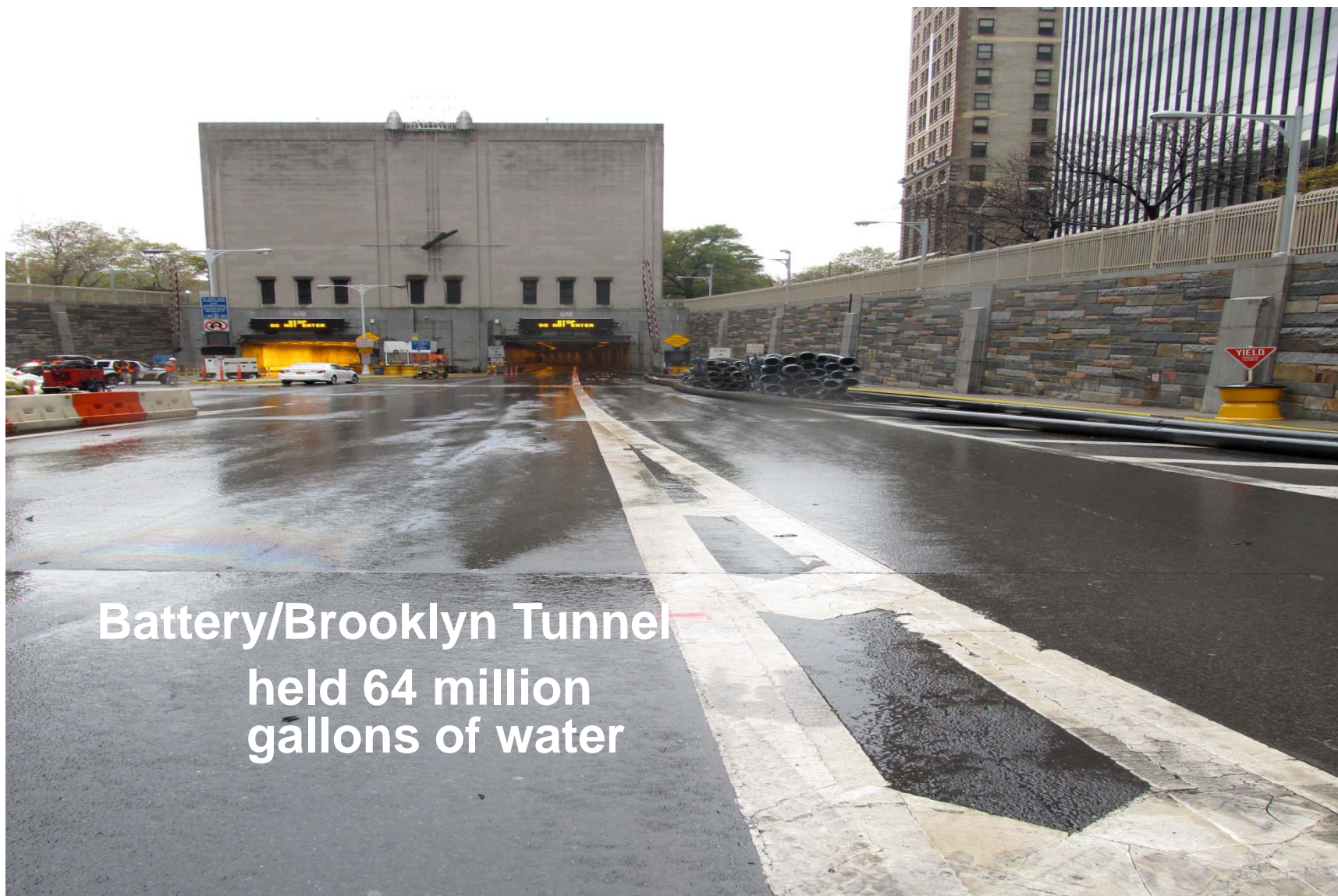
Hurricane Sandy

**SUPSALV "Green" Van -
provided self sustaining power
and communications suite for
SUPSALV Command and
Control**





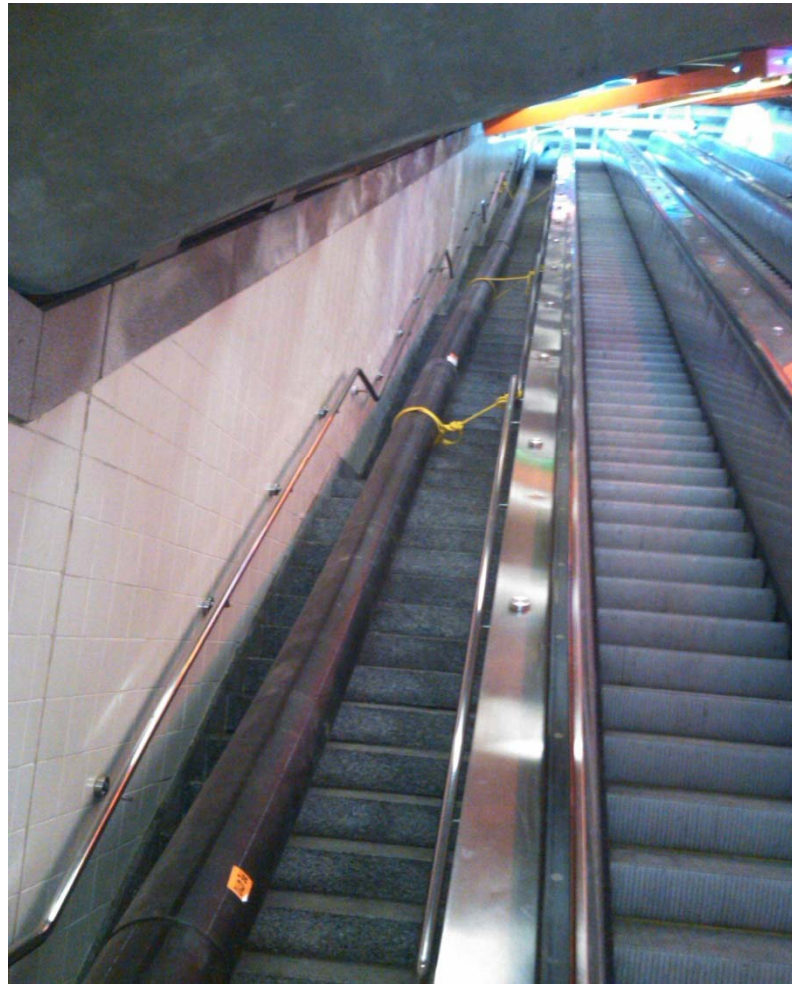
Hurricane Sandy



Battery/Brooklyn Tunnel
held 64 million
gallons of water

SUPSALV engaged support through existing contracts to immediately mobilize pumps, support equipment and personnel to the NY/NJ area.

DonJon Marine: creatively decided to deliver the dewatering and ancillary equipment to Battery Park HQ site via barge flotilla



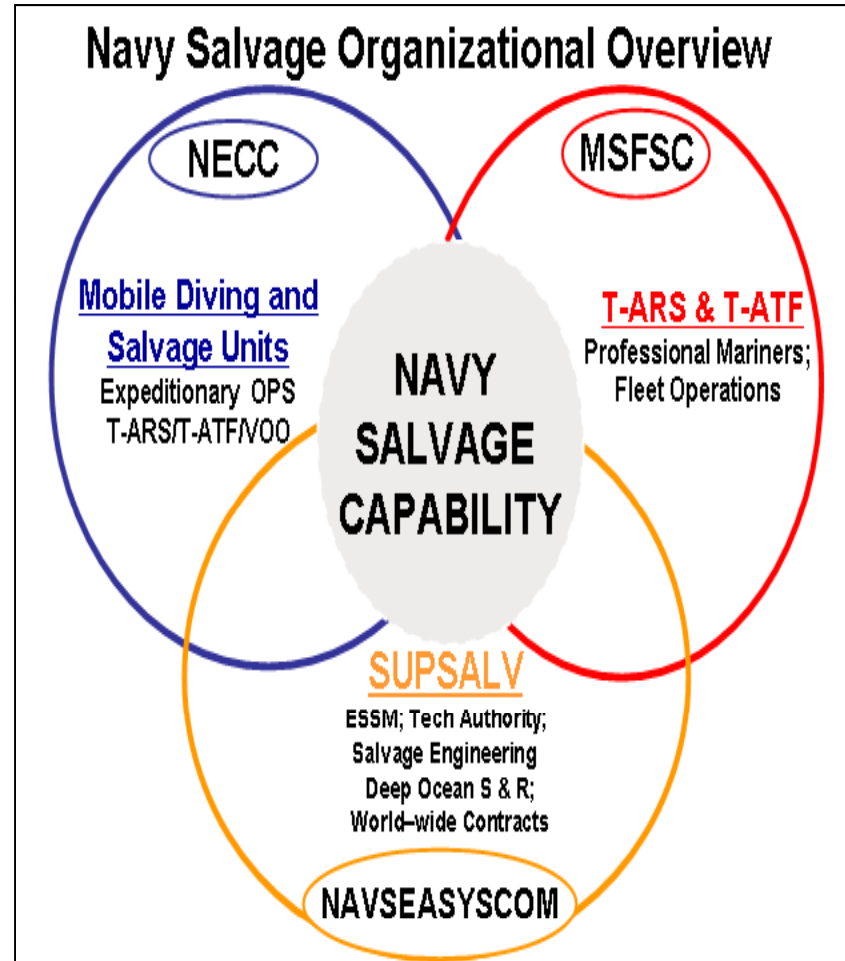




Hurricane Sandy

Facility / Location	Agency / Owner	Est. Volume to Pump
Battery Underpass / West Street Underpass	NYC DOT	10 m gal
Brooklyn Battery Tunnel	MTA - B&T	64 m gal
PATH Train Tunnel	PANYNJ	200 m gal
World Trade Center	PANYNJ	200 m gal
14th St Tunnel	MTA - NYCT	3.5 m gal
53rd Street Tunnel	MTA - NYCT	2 m gal
Montague Tunnel	MTA - NYCT	25 m gal
Amtrak Substation Kearny, NJ	AMTRACK	5.4 m gal
South Ferry Station	MTA - NYCT	20 m gal

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- ***TOTAL ESTIMATE POL ONBOARD 15, 700 gal***
 - **14, 600 gal Diesel Fuel (DFM)**
 - **500 gal hydraulic fluid**
 - **600 gal L/O in sumps and storage tanks**

- ***No indication of catastrophic hull penetration***





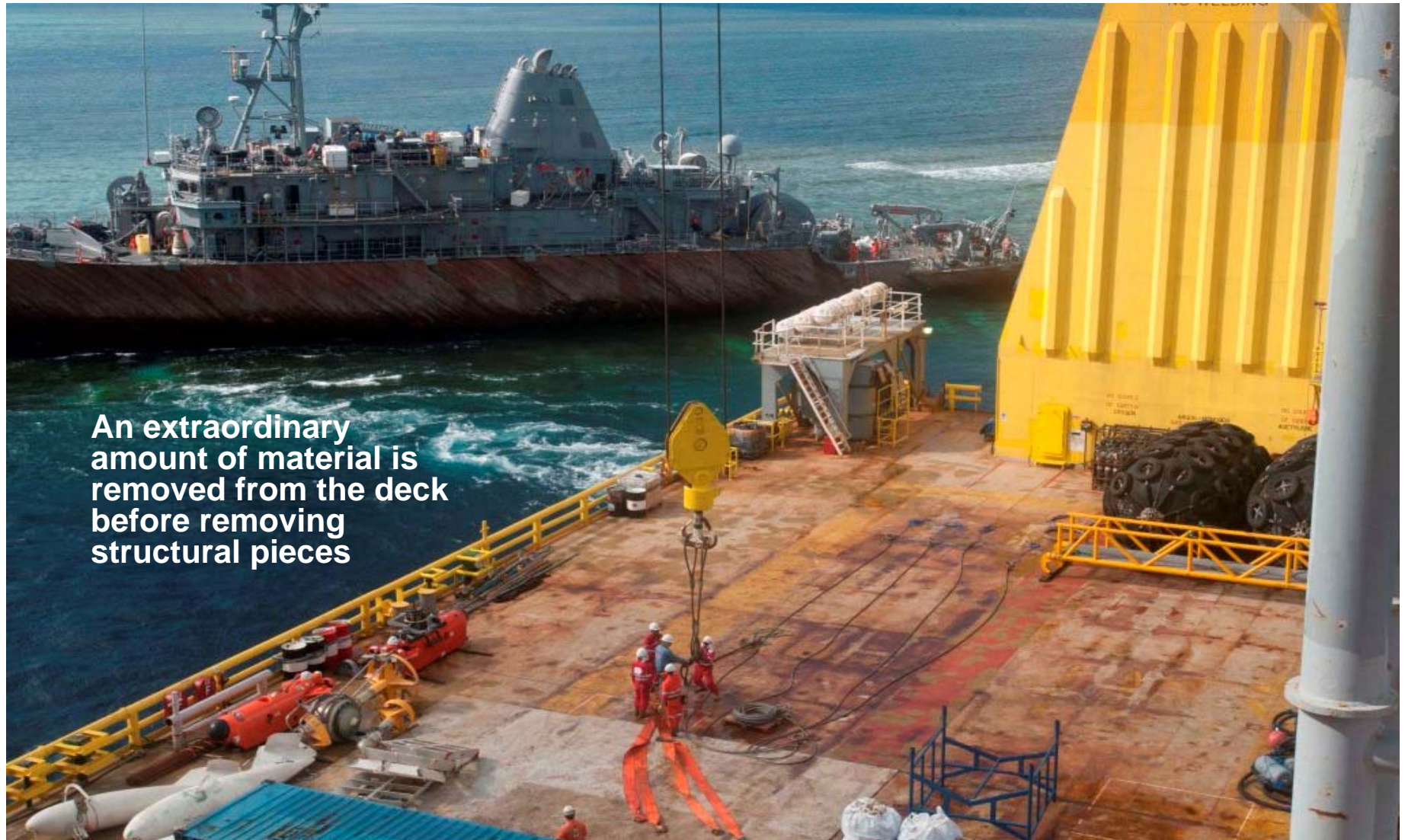
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VOS Apollo
on scene
with
lighterage
equipment

Exposed wood
hull becoming
more water-logged
every day

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An extraordinary amount of material is removed from the deck before removing structural pieces

The Stacks



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**MDSU
Divers
removing
materials**



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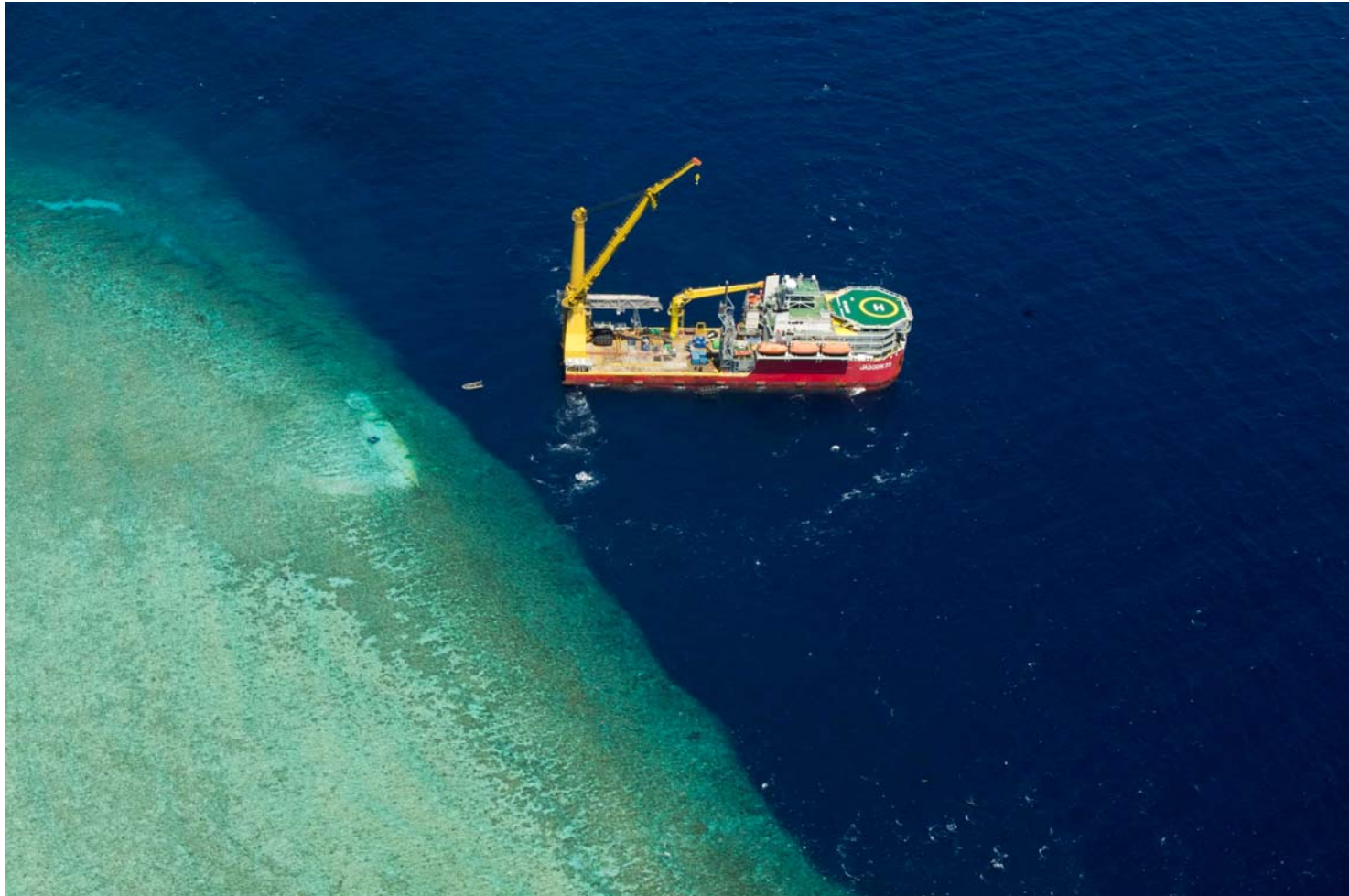


Ex-GUARDIAN





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Accomplishments:

- Carried-out at sea - 85 miles from nearest port
- Water-logged wood hull increased weight significantly
- No release of hazmat or oil
- No structural collapse
- Reduced environmental impact

