

The Navy's Response to the
Deepwater Horizon
OIL SPILL

*SUPSALV Reflects on Response Efforts,
Lessons Learned One Year Later*

One year after the catastrophic oil spill that resulted from the explosion of the Deepwater Horizon mobile offshore drilling unit, personnel from Naval Sea Systems Command's Supervisor of Salvage and Diving (SUPSALV) reflect on their response efforts, focus on lessons learned and now maintain an enhanced posture for future spill response operations.



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On 20 April 2010, Deepwater Horizon exploded and caught fire in the Gulf of Mexico during well completion operations. Five days later, it was discovered that the well continued to leak significant amounts of oil and the U.S. Coast Guard (USCG) formally requested support from SUPSALV. SUPSALV is authorized to provide this pollution response support in accordance with an Inter-Agency Agreement for mutual oil-spill and

salvage assistance between the USCG and the U.S. Navy. SUPSALV capabilities include technical, operational, and emergency support in the disciplines of marine salvage, pollution abatement, diving, diving system certification, and underwater ship husbandry, and SUPSALV maintains a network of warehouses worldwide that store and maintain equipment to respond to these mission assignments.



On 21 April 2010, firefighting vessels attempt to control flames on the Deepwater Horizon rig after the explosion that killed 11 workers. The rig sank the following day.



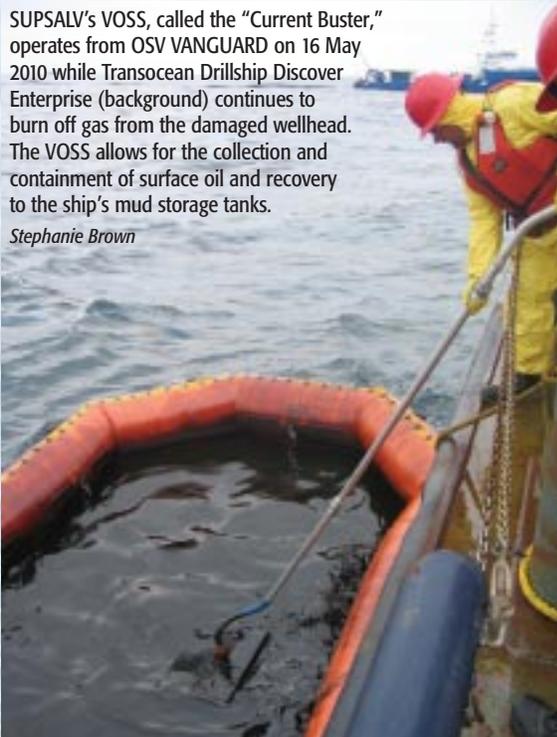
The first oil sighted by SUPSALV responders during the transit to the source of the spill to commence skimming operations.

Stephanie Brown

Within four hours of the request for resources, trucks loaded with SUPSALV's oil spill response (OSR) equipment were en route to the Gulf Coast, the first trucks arriving before the spill was declared a "Spill of National Significance" (SONS). By the middle of May 2010, SUPSALV had shipped more than 100 truckloads of equipment from pre-positioned warehouses in Virginia, California, and Alaska. The gear included 96,000 feet of oil containment boom and twenty-three oil skimming systems that were eventually deployed from nine sites from Texas to Florida in support of the clean-up efforts being led by the USCG. Deployment, operation, and management of SUPSALV equipment required more than 130 personnel and four contracted Offshore Supply Vessels (OSV) at the peak of the response.

SUPSALV's VOSS, called the "Current Buster," operates from OSV VANGUARD on 16 May 2010 while Transocean Drillship Discover Enterprise (background) continues to burn off gas from the damaged wellhead. The VOSS allows for the collection and containment of surface oil and recovery to the ship's mud storage tanks.

Stephanie Brown



U.S. Navy Deepwater Horizon Oil Spill Response 2010

- Rig explodes 50 miles offshore. — 20 April
- Rig sinks in 4,900 feet of seawater. — 22 April
- USCG requests SUPSALV. — 27 April
- SUPSALV equipment arrives in Gulf. — 29 April
- Declared "Spill of National Significance." SUPSALV deploys first boom offshore. — 30 April
- CNO visits Gulf. — 04 May
- SUPSALV's Alaska equipment requested. — 11 May
- First OSV with SUPSALV skimmers arrive at source and begin recovering oil. — 16 May
- Second and third OSVs with SUPSALV skimmers deployed offshore to source. — 25 May
- SUPSALV's near-shore skimmers deployed, recovering oil across nine locations in Gulf Region. — 08 June
- Final SUPSALV protective boom laid, totaling 63,200 feet across the Gulf Region. — 09 June
- BP installs capping stack, halting leak from well. — 15 July
- Demobilization of SUPSALV's offshore skimmers begins. — 29 July
- Demobilization of SUPSALV's near-shore skimmers begins. — 16 August
- First return shipment of equipment. — 13 September
- Last equipment completes decontamination. Navy issues final situational report. — 20 September
- Last Navy personnel and equipment depart Gulf Region. — 04 October

Except for evacuations for two tropical storms, booming operations and near/offshore skimming was continuous from late April to August.

This also included one Senior Undersea Engineer at the British Petroleum (BP) Engineering Crisis Center in Houston, TX where the well-containment strategies and methods were developed. Though SUPSALV's resources were strategically divided among multiple locations to provide assistance to affected areas, centralized staging and management were performed at the Mississippi State Dock in Gulfport, MS.

SUPSALV booming operations, near shore skimming, and offshore Vessel of Opportunity Skimming System (VOSS) were carried out in Florida, Alabama, Mississippi, and Louisiana, as well as in the area of the leaking well itself. The booming operations mainly used 42-inch boom, typically anchored by 500 or 1,000 pound anchors with 4,500 pounds of chain or sometimes moored to piles or oil rigs. Some smaller boom was also used. The near shore skimming was conducted with 18 MARCO Class V systems using two boats each, towing boom in a "V" configuration and pumping to collection

bladders. To reach the oil past the barrier islands, many of these systems were operated from barges 10 to 20 miles offshore. Offshore VOSS skimming was done from the chartered OSVs. Except for evacuations for two tropical storms, booming operations and near/offshore skimming was continuous from late April to August. For the responders, conditions were often austere and trying.



The Marco Class XI skimmer system was deployed near the source of the spill along with the two other vessels outfitted with Current Busters.
Calvin Scott



The Navy's equipment staging area and operations center at the State Docks in Gulfport, MS.

Allen Gardner

U.S. Navy Assets Deployed to the Gulf
(as of 31 July 2010)

- 96,000 feet of boom
- 18 near-shore skimmers
- 37 in-shore skimmers
- 5 offshore skimmers
- More than 300 personnel
- More than 200 truckloads of support equipment



A satellite image of the oil slick off the Mississippi delta (24 May 2010).

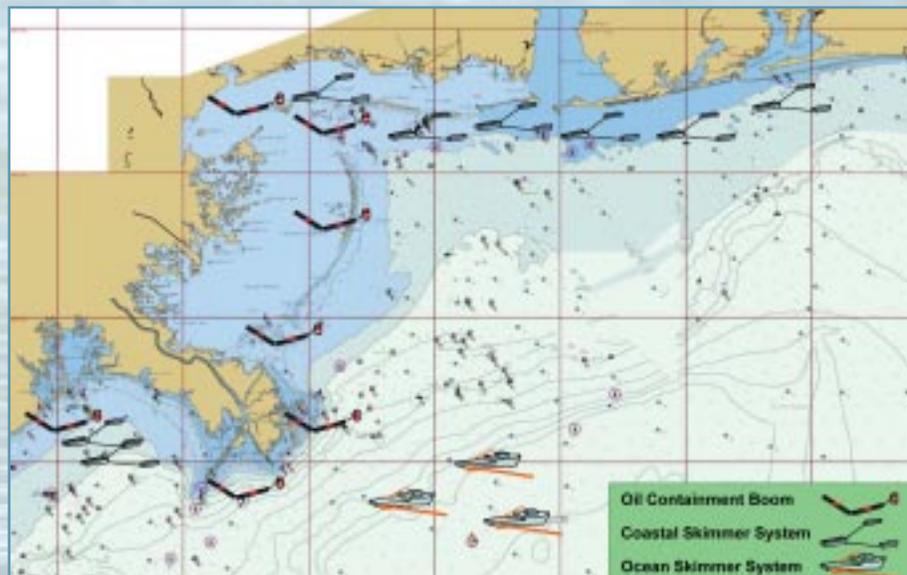
In mid-June 2010, Commander, Navy Installations Command (CNIC) was directed to mobilize their excess OSR resources, which are owned and maintained for response to Navy facility spills. The CNIC oil spill response assets were launched from their various home bases, which included every region in the Continental United States (CONUS), to the Gulf region to provide additional support to the federal response efforts. These assets totaled 37 in-shore skimmer systems, four Harbor Buster skimmer systems, and 35 utility boats. The utility boats were used in conjunction with the skimmers, which were also staged at the Mississippi State Dock to ensure one coherent U.S. Navy staging area co-located with Navy Command and Control. Over 200 personnel from the different CONUS U.S. Navy regions were also mobilized on a rotational basis to operate and manage this equipment throughout the duration of the spill.

Though the CNIC responders were not activated until later in the response and were only operating in limited near-shore areas, they were still responsible for cleaning up approximately 4,200 gallons of the oil.

In late September 2010, the USCG Office of Investigation and Casualty Analysis requested detailed video inspection of the sunken Deepwater Horizon oilrig debris field to assist in the USCG/Department of Justice (DOJ) investigation of the accident. SUPSALV called in its Deep Ocean

Deployment of SUPSALV's oil response equipment across the Gulf Region (16 June 2010).

Don Fegley



The Navy's presence in the Gulf accounted for the skimming, collection and disposition of approximately *one million gallons of oil.*

Search and Recovery capability and deployed its Deep Drone Remotely Operated Vehicle (ROV) with an incorporated XBOT (mini ROV) to conduct 11 dives from 28 September to 3 October 2010, logging 74 hours of total bottom time.

The Navy's presence in the Gulf spanned the period of April through October 2010 and accounted for the

skimming, collection, and disposition of approximately one million gallons of oil and the provision of a significant amount of technical and engineering support to response efforts. At the peak of recovery operations, SUPSALV's skimmers (near-shore and offshore) collected more than 1,600 barrels in a single day. Though SUPSALV's response teams were in an excellent state of readiness due to their rigorous equip-

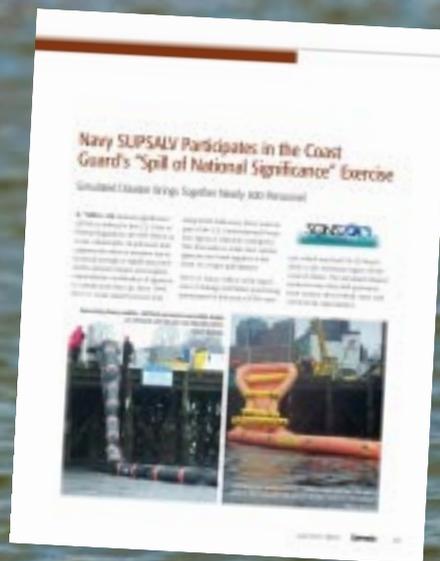
ment maintenance schedule and regular hands-on training events, the magnitude and duration of this spill response was unprecedented for the Navy's oil spill response community, the USCG, and the nation.

"This was a community-wide effort," says CAPT Keenan, U.S. Navy Supervisor of Salvage. "The assistance we received from the Fleet, both active and reserve, was critical. It not only allowed us to maintain our support to the U.S. Coast Guard at the highest possible level, but also enabled SUPSALV to continue meeting our other worldwide salvage and diving responsibilities."

In retrospect, the Navy's efforts to support the national Deepwater Horizon incident response were very effective, but remained demanding to the end. The incident illuminated coordination and communication challenges that arise when inte-

For More *Insights*

For more insights into SUPSALV's preparations for SONS, read our article entitled "Navy SUPSALV Participates in the Coast Guard's "Spill of National Significance" Exercise: Simulated Disaster Brings Together Nearly 600 Personnel" in the summer 2010 issue of *Currents*. The *Currents* archive from our fall 2010 and previous issues can still be found on the Naval Air Systems Command's environmental web site at www.enviro-navair.navy.mil/currents. Our more recent archive is now housed at *Currents'* new home on the Internet—the Department of the Navy's new Energy, Environment and Climate Change web site—at <http://greenfleet.dodlive.mil/currents-magazine>.



Oil recovered with one of SUPSALV's Marco Class V skimmer drops off the sorbent belt .



The sun rises over the Transocean Drillship Discover Enterprise near the site of the Deepwater Horizon sinking, starting another long day of skimming operations for the SUPSALV team.

Stephanie Brown

grating with other federal agencies, as well as with state and local governments during emergency operations. Because the spill was designated a SONS event in accordance with Section 300.323 of the National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR Part 300), the typical roles and relationships among DoD, other federal agencies, and even within the Navy didn't always apply. Multiple Incident Command Posts (ICP) required the Navy to work directly for the Unified Area Command for resource allocation and the individual ICPs for operations.

Sometimes communication issues extended into technical arenas, and that is where the Navy spill response community finds itself better prepared for future operations. Due to the multi-state involvement and spread of affected areas, coordinating booming and near shore skimming opera-



The dense debris often encountered offshore posed a challenge during oil skimming operations.

Rex Avila

BP contractors wipe down a Harbor Buster from Naval Station Mayport before steam-cleaning it in the decontamination process at Naval Air Station Pensacola (30 June 2010).
Mass Communications Specialist Petty Officer 1st Class Monica R. Nelson

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tions were some of the challenges facing the spill response team. Booming strategies were often developed that placed boom across high current areas in a barrier mode. The boom used in this application was soon destroyed and, had it lasted, would still have been ineffective due to entrainment of any oil it met. (Note: Entrainment happens when oil escapes under a boom due to the excessive flow of the surrounding waters.) In this situation, a “deflect and collect” mode would have been far more successful. These conflicts also included the affected states competing for assets and were even referred to as “Boom Wars” in the National Commission Report to the President.

To counteract these types of problems, SUPSALV developed an official Concept of Operations for their equipment, which provides upfront descriptions of how to effectively employ the assets to those who may otherwise

SUPSALV responders wrestle to pull shore boom up near the beach line as they work to protect Breton Island, LA from the inbound oil slick.

Mike Pricol



The Chief of Naval Operations, Admiral Gary Roughead (second from right) and his staff tour the Gulfport Operations Center in May 2010 for a firsthand look at the Navy's response.

Allen Gardner

Navy civilians conduct skimming operations in southeast Louisiana.

*Mass Communication Specialist 2nd Class
Jordan J. Miller*



be unfamiliar with the equipment, yet find themselves responsible for assigning its use.

Due to the nature of their designated mission assignment, deploying CNIC in-shore skimmers away from their parent command will remain challenging in any major response. This equipment has been procured without significant consideration for over-the-road or fly-away capability because they normally are only required to operate at the facility where they reside. However, during Deepwater Horizon, CNIC responders gained significant experience supporting their equipment in the field and learned valuable lessons.

Now that the entire SUPSALV and CNIC equipment inventory is back in its respective warehouses and is being returned to its original state of readiness, numerous

SUPSALV's protective boom was spread throughout the Gulf region. This was the first of the boom deployed, located near Ship Island, MS.

Allen Gardner

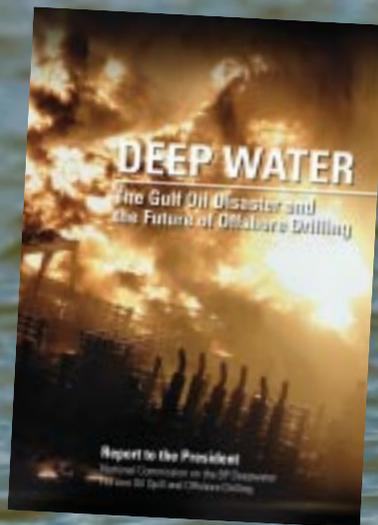


equipment modifications and improvements have been made as a result of the lessons learned during operations in the Gulf of Mexico. Because of the extreme duration of the cleanup efforts, operators put the equipment to the test and discovered innovative ways to overcome

mechanical and logistical problems. Real emergency response operations are the best venue to train and tailor the necessary skills. This disaster was a great tragedy for the Gulf Region and those families who lost loved ones. And the Navy spill response community is working to incorporate the lessons learned into programmatic changes that will allow it to maintain an even better posture to meet future calls for support. ⚓

For More *Insights*

For more insights into the Report to the President by the National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling, entitled “DEEPWATER: The Gulf Oil Disaster and the Future of Offshore Drilling,” visit <http://www.oilspillcommission.gov/final-report>.



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