

Lessons from the Gulf blowout

Learning (the right lessons, hopefully) from the Gulf of Mexico disaster

By: Paul Driessen



(photo source: unknown)

Transocean's semi-submersible drilling vessel Deepwater Horizon was finishing work on a wellbore that had found oil 18,000 feet beneath the seafloor, in mile-deep water fifty miles off the Louisiana coast. Supervisors in the control cabin overlooking the drilling operations area were directing routine procedures to cement, plug and seal the borehole, replace heavy drilling fluids with seawater and extract the drill stem and bit through the riser (outer containment pipe) that connected the vessel to the blowout preventer (BOP) on the seafloor.

Suddenly, a thump and hiss were followed by a towering eruption of seawater, drilling mud, cement, oil and natural gas. The BOP and backup systems had failed to work as designed, to control the massive amounts of unexpectedly high-pressure gas that were roaring up 23,000 feet of wellbore and riser.

Gas enveloped the area and ignited, engulfing the Horizon in a 500-foot high inferno that instantly killed eleven workers. Surviving crewmen abandoned ship in covered lifeboats or jumped 80 feet to the water.

The supply boat Tidewater Damon Bankston rushed to the scene and helped crewmen get their burned and injured colleagues aboard. Shore-based Coast Guard helicopters tore through the night sky to brave the flames and take critically injured men to hospitals.

Thirty-six hours later, the Deepwater Horizon capsized and sank, buckling the 21-inch diameter riser and breaking it off at the rig deck. Three leaks began spewing some 5,000 barrels (210,000 gallons) of crude oil per day into the ocean. As the oil gathered on the surface and drifted toward shore, it threatened a major ecological disaster for estuaries, marine life and all who depend on them for their livelihoods.

Thankfully, after getting rough for a couple days, the seas calmed. Industry, Coast Guard, NOAA and Minerals Management Service (MMS) crews and volunteer from Louisiana to Alaska had some time to recalculate the spill's trajectory, deploy oil skimmer boats and miles of containment booms, and burn some of the oil off the sea surface. They lowered ROVs (remotely operated vehicles) to cap the end of the riser and spray chemicals that break down and disperse the oil.

Aircraft sprayed more dispersants over floating oil, and technicians hurried to deploy cofferdams specially designed to sit atop the broken riser and BOP stack, fix the ice crystal (hydrates) problem, collect the leaking oil and pipe it up to tanker barges. Drill ships are on the scene, to drill relief wells, intersect the original hole, cement it shut and permanently stop the leak. ExxonMobil, Shell, ConocoPhillips and many other companies have offered BP, Transocean and Halliburton assistance on all these fronts.

How bad will the disaster be? Much depends on how long the calm weather lasts, how quickly the cofferdams can be installed, and how successful the entire effort is. There is some cause for optimism – and much need for prayer, crossed fingers and hard work.

But it will take weeks to years of uncontrolled leakage, before this spill comes close to previous highs, such as the:

- * Santa Barbara Channel oil platform blowout (1969): 90,000 barrels off the California coast;
- * Mega Borg tanker (1990): 121,400 barrels in the Gulf of Mexico off Galveston, TX;
- * Exxon Valdez tanker (1989): 250,000 barrels along 1,300 miles of untouched Alaska shoreline;
- * Ixtoc 1 oil platform blowout (1979): 3,500,000 barrels in Mexico's Campeche Bay;
- * Saddam Hussein oil field sabotage (1991): 857,000,000 barrels in Kuwait;
- * Natural seeps in US waters: 1,119,000 barrels every year from natural cracks in the seafloor.

Cold water and climate meant Alaska's Prince William Sound recovery was slow; Campeche beaches and coastal waters largely rebounded much more rapidly. Mississippi River flows through the warm Delta region may help keep some oil from pushing too far into the estuaries and speed recovery of oyster, shrimp and fishing areas, as it did with spills during pre-1960 drilling. Prayers and crossed fingers again.

Should we stop drilling offshore? We can hardly afford to. We still need to drill, so that we can drive, fly, farm, heat our homes, operate factories and do everything else that requires reliable, affordable petroleum. Indeed, over 62% of all US energy still comes from oil and gas. And we certainly need the jobs and revenues that US offshore energy development generates.

We've already banned drilling in ANWR, off the Florida, Atlantic and Pacific coasts, and in many other areas. We've made it nearly impossible to mine coal or uranium, or build new coal-fired power plants or nuclear reactors. We've largely forced companies to drill in deep Gulf waters, where risks and costs are far higher, and the ability to respond quickly and effectively to accidents is lower.

We've also forced companies to take drilling risks to foreign nations – and then increased the risks of tanker accidents that cause far greater spillage when they bring that oil to America. Meanwhile, Russia, China and Cuba are preparing to drill near the same Gulf and Caribbean waters that we've made off limits – employing *their* training, technologies, regulations and ecological philosophies.

Even with this blowout and its 1969 Santa Barbara predecessor, America's offshore record is excellent. Since 1969, we have drilled over 1,224,000 wells in state waters and on the Outer Continental Shelf. There have been 13 losses of well control involving more than 50 barrels: five were less than 100 barrels apiece; one was a little over 1,000 barrels; two (both in 1970) involved 30,000 barrels or more. Only in Santa Barbara (so far) did significant amounts of oil reach shore and cause serious environmental damage.

Globally, tankers have spilled four times more oil than drilling and production operations, often in much bigger mishaps, often in fragile areas – and chronic discharges from cars and boats dwarf tanker spills by a factor of eight. (All spill data are from the MMS and National Research Council.)

What should we do next? Recognize that life, technology and civilization involve risks. Humans make mistakes. Equipment fails. Nature presents us with extreme, unprecedented, unexpected power and fury.

Learn the right lessons from this tragic, catastrophic, probably preventable accident. Avoid grandstanding and kneejerk reactions. Replace people's lost income. Insist on responsible, adult thinking – and a thorough, expert, non-politicized investigation. Find solutions instead of assigning blame.

Why did the BOP and backups fail? What went wrong with the cement, plugs and pressure detection devices, supervisor and crew monitoring and reactions, to set off the catastrophic chain of events? How can we improve the technology and training, to make sure such a disaster never happens again? Did the regulators fail, too? How can we improve oil spill cleanup technologies and rapid response?

Ask what realistic alternatives we have. Not "Sim City" or "Sim USA" and virtual energy. Real energy.

Can we afford to shut down our domestic oil and gas industry – economically, ecologically and ethically – and import more, as we export risks to other countries, and shift risks from drilling accidents to tanker accidents? Can we afford to replace dozens of offshore rigs with thousands of towering, unreliable offshore wind turbines, creating obstacle courses for ships laden with bunker fuel or crude oil?

Drilling in deep waters far from shore is a complex, difficult, dangerous business. Let us remember and pray for those who died, those who were burned and injured, and their families and loved ones. Let us also pray for all who daily risk life and limb, to bring us the energy that makes our lives, jobs and living standards possible; for all whose lives have been affected by the spill; and for a rapid repair and cleanup.

[To learn more about offshore drilling and production and this accident, visit the [NOAA](#) emergency response page, [Open Choke](#) Deepwater Horizon spill page, and [Drilling Ahead](#) oil professionals network.]

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