How does a rig "so technologically advanced it could not spill", do just that? What does that say for the future of the industry?

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The Spill

At 9:48 P.M. CDT on April 20th, 2010, an explosion tore through the exploratory Macondo well, killing eleven crewmembers and injuring seventeen others. Flames quickly consumed the rig; nothing was salvageable when the rig sank two days later, causing the piping to collapse and gush oil from several cracks. A combination of unique, improvised efforts eventually stopped the spill 87 days after the explosion. After numerous battles in the media, involving interested parties with estimates regarding how much oil was actually spilled, official government reports eventually estimated the total spill at 210 million gallons of crude oil, which averages out to roughly 1.9 million gallons a day. The duration and high flow rate combined to make this spill the largest peacetime offshore oil spill ever documented (Freudenburg and Gramling 2011:13). This spill affected a population that relied primarily on three economies: oil, fishing, and tourism, three economies that are vulnerable to, and ultimately were devastated by oil spills.

Cited Causes

As with any complex, interdependent system failure, it is not easy to point to one cause for the blowout. Four parties had a direct stake in the outcome:

1. BP leased the rig, owned the rights to the well, and provided the engineers that made critical decisions,
2. Transocean owned the rig and provided a majority of the workers,
3. Halliburton performed the faulty cement job, and
4. The U.S. federal government has primary responsibility for regulating offshore development, leasing oil fields, collecting revenues, and directing of the cleanup effort.

Since this was a blowout, much of the discussion instantly went to the faulty cement job. The cement was an experimental aerated cement that had reportedly failed two out of three pressure tests prior to instillation. Among other missteps, BP engineers approved the cement and the shorter casing, and put forward an unreasonable response plan that cited wildlife not found in the area and a wildlife expert who had passed away before the plan was approved. MMS, the organization that regulated offshore drilling at the time, suffered from corruption charges, was understaffed, and had a conflict of roles that put the organization in a poor position to regulate offshore energy development. Sorting out liability, however, did not turn out to be the issue expected, given the amount of possible parties. BP claimed legal responsibility, waiving the $75 million cap on expenditures if not found liable (which is highly unlikely), and decided to sort out the costs associated with Halliburton and Transocean in court (Commission 2011).

In line with ideas noted by Laska (2014) of the "second disaster", the recovery period saw numerous issues, many of which can be traced back to past development and planning in place at the time of the spill. In recovery plans sent to the Mineral Management Service (MMS) in 2001, BP claimed they had the capacity to remove 497,721 barrels of oil daily using dispersants, booms, and skimmers, most of the same technology used in response to both the 1969 Union Oil *Platform A* blowout and *Exxon Valdez* spill (Kindy 2010). In reality, by the month of July BP only managed to remove roughly 238,000 barrels total (Freudenburg & Gramling 2011, p. 14). In November of 2010 the federal government released the *Oil Budget Calculator*, claiming that only 49% of the oil spilled had been disposed of through a combination of burning, skimming, dispersant use, and direct recovery from the wellhead (Oil Budget 2010). The Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling emphasized that risk management policy and practices failed to keep up with the rapidly advancing technology of deepwater drilling and that, while the industry developed extremely advanced production methods, the cleanup technology remained stagnant since *Exxon Valdez* (Commission 2011, p. 103). The organizations responsible for developing new cleanup technology had not made significant changes in the way the government and industry approached large spills.

Results

After the 87 straight days of national and international media coverage, public attention drifted away from the spill. The hunt for major state-level legislation does not yield results. Since this spill is still relatively recent, it is impossible to say that no major state legislation will come from this. When asked if the Gulf States passed any legislation resulting from the *Deepwater Horizon* blowout, an informant deeply connected with the response to spills in the Gulf area stated that there was no legislation to beef up regulations in the Gulf States. The bigger push, they stated, was for states to receive a portion of the fines BP received for recovery and for expedited drilling permits. While this may seem counterintuitive, the economic situation at the time, not environmental concerns, was driving state concerns and policy agendas. This statement clearly shows that the state governments in the Gulf are in no way responding to this event as the California public did to *Platform A* when they effectively ended offshore drilling in California. Instead of pushing for more state power to regulate (or the abandonment of offshore drilling altogether), some Gulf States are looking to push permits through quicker and allow the federal government to instate any regulatory change they deem necessary (Greer 2012).

The federal government addressed the issues presented in this spill by dismantling the regulatory agency in charge of deepwater drilling at the time. On May 19, 2010, Secretary of the Interior Ken Salazar ordered MMS to split into three independent agencies to carry out the primary three duties it already had, leasing, regulating, and collecting revenue. This new organization was renamed the Bureau of Oceanic Energy Management, Regulation and Enforcement (BOEMRE) in an attempt to better align its name with the goals of the agency. In June of 2010, President Obama asked Michael Bromwich, a former Inspector General, to lead this reorganized agency (Commission 2011). It is important to note though that this process has not in any noticeable way made the permitting process longer or more costly.

As we visibly drift into the post-problem stage from this spill, new technology allows us to virtually track shifts in attention. Using Google trends, which shows how often a specific term is "googled" over time, the search terms "oil spill," "Deepwater Horizon," "Macondo," and "BP" all show significant spikes in searches in early Q2 2010 and a return to normalcy by the end of

Q3 2010 (Google 2012). Due to all the coverage, the claim could be made that this spill was a victim of the "constraints on surplus of compassion." The forces potentially drawing interest away are also becoming apparent. The housing market crash along with the financial crisis in both the U.S. and Europe stole most of the national media spotlight. The death of Osama Bin Laden in 2011 and the impending presidential election clogged the airwaves. While the *Deepwater Horizon* is by far the largest spill in U.S. history, there is a history of oil spills in the U.S. most people never see. In an ongoing study I am currently conducting with Eric Best, we found that since 1964 the Bureau of Ocean Energy Management (which recently replaced the Minerals Management Service) documented 33 Outer Continental Shelf (OCS) spills over four million gallons (BOEM 2012). Only four of those spills received significant media attention. Attention to spills is rare, and a fleeting prospect.

Arctic

The future of oil appears to be in the Arctic. With the ice receding further and earlier each year, new areas in Arctic waters are open for exploratory drilling. This is good news for oil companies; the United States Geological Survey (USGS) predicts that the Arctic region reserves contain 1.70 trillion cubic feet of undiscovered gas, 90 billion barrels of oil, and 44 billion barrels of natural gas liquids (Harsem, Eide and Heen 2011). A large portion of these reserves are believed to be recoverable too; making the area the second largest domestic supply the U.S. has (behind the Gulf) and early analysis suggests that the Arctic is capable of producing an estimated 1.8 million barrels of oil a day (Commission 2011). As noted by the National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling (2011), access to these fields may align to offset domestic production drop-offs due to tapped reserves in other key areas.

Shell Oil dominates exploration in Beaufort and Chukchi Sea. Since 2005, Shell spent $4.5 billion on exploration in the Arctic (Krauss 2012). Currently, Shell owns 275 federal drilling leases in the Chukchi Sea and 137 in the Beaufort Sea. By being one of the first companies exploring the area, Shell has its pick of the lease blocks. This also gives the company a chance to develop the initial infrastructure (such as permanent oilrigs, piping, lodging for workers, airstrips, and roads), which Shell can lease to other oil companies to bring in even more revenue from the area (Dlouhy 2012). Initially, Shell Oil planned to drill five exploratory wells in 2012. Their 2012 efforts ended when Marvin E. Odum, Shell Oil's president, told The New York Times "we've made the call that we are better off not drilling in hydrocarbons this year." The 2013 season never began for Shell. The company stated that they would use 2013 to repair their two drilling rigs they were using in the area and to update their drilling plans (Fowler and Lefebvre 2012). Due to cited delays in the repair of their two rigs, the 2014 season also never began for the company.

While the water is not as deep and the pressures are not as high as they were for the *Deepwater Horizon*, the Arctic is an exceptionally dangerous setting for drilling. For many months of the year this area is in extended periods of darkness, endures hurricane-force winds, is covered by ice for eight to nine months a year, and contends with ice floe which could (and has) stop drilling or cause a spill (Commission 2011, Hasle, Kjellén and Haugerud 2009). If a spill occurred, relief wells in the area are more challenging to drill and many industry members do not consider standard spill technologies reliable in this environment (Beilinson 2012, Callus 2012, Klimasinska 2012). The area is also extraordinarily remote, requiring extensive response

capabilities to be on site at all times: the closest permanent response capabilities by air would likely come from Air Station Kodiak roughly 800 nautical miles away, and by sea from Point Barrow which is roughly 1200 nautical miles away (Kroh, Conathan and Huvos 2012). Restrictions are also in place due to hunting and breeding seasons as well as ice encroachment, limiting the companies to the summer months (Callus 2012, Lippert 2013). As put by a staffer of the World Wildlife Fund, "an oil spill occurring in the Gulf is like a heart attack happening in a hospital — you have everything you need to be treated. A spill in the Arctic is like having a heart attack on the North Pole — you're on your own" (Walsh 2010). BSEE director James Watson stated, "I can't guarantee there won't be a spill. We're erring on the side of extreme caution, but with every war plan there's a lot that you don't know ahead of time" (Beilinson 2012). The environmental coalition argued that a spill in the Arctic would be almost impossible to clean, especially the 95% Shell states they could remove before any oil reached coastlines in Alaska.

Bonus Material: How Do Companies Address Their "Fiscal Responsibility", the "Third Disaster"?

As noted earlier, BP waived the liability cap almost immediately, stating that they would pay all of the costs associated with the cleanup and reimburse the victims for their losses. President Obama asked BP to set aside $20 billion to handle these costs, and BP hired Kenneth Feinberg, the man responsible for the 9/11 Victim Compensation Fund, to reach settlements with victims. BP has changed their approach, however, in the recent months, questioning the legitimacy of claims, relieving Feinberg of his duties and changing the calculation method to losses since 2010, and requiring businesses to document losses multiple times to the point of attrition. While settlements related to the *Exxon Valdez* spill were different, they had their own problems. The legal battle related to this spill has been stretched out and hard fought, so much so that one out of five of the claimants in the case against the Exxon Corporation was dead by the time their cases closed (Freudenburg and Gramling 2011:17). In total Exxon has paid out $3.4 billion USD in penalties, fines, and claims thus far. The punitive damages trial ended in 1994 with $5.2 billion USD being awarded to various parties, but this ruling has been appealed and there is still litigation that has been stretched out over 25 years, making the *Exxon Valdez* the longest litigated environmental disaster in history (Steiner 2013). Even with this in mind, Feinberg, now watching the litigation from the sideline, said that the litigation surrounding the BP spill is in such a bad place that the extended litigation of the *Exxon Valdez* may be a better approach (Robertson and Schwartz 2014).

Possible Discussion Topics:

1. Are we any safer now after the *Deepwater Horizon*, or are we back to "business as usual" in a riskier, less predictable environment?
2. Can we accurately assess the "costs" of offshore drilling?
    A. Is that the role disaster research should take on?
    B. How do we do that systematically?
3. How do we balance environmental risks and national security?
    A. Is national security a valid counterpoint to environmental risk?
    B. That is to say, can we eliminate unacceptable uncertainty? Is that a desirable goal? Is it necessary?
    C. How does scientific learning take place in an environment with real motivation to not slow down or change the status quo and a powerful lobby and a public with fickle attention spans?
        a) What would be the components of a fair, standard compensation program?
            i. Who oversees this program?

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