



Transocean
GREENWATER HORIZON

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Chapter One

“Everyone involved with the job . . . was completely satisfied. . .”

The Deepwater Horizon, the Macondo Well, and Sudden Death on the Gulf of Mexico

At 5:45 a.m. on Tuesday, April 20, 2010, a Halliburton Company cementing engineer sent an e-mail from the rig *Deepwater Horizon*, in the Gulf of Mexico off the Louisiana coast, to his colleague in Houston. He had good news: “We have completed the job and it went well.”¹

Outside in the Gulf, it was still dark—beyond the glare of the floodlights on the gargantuan rig, the four decks of which towered above the blue-green water on four huge white columns, all floating on massive pontoons. The oil derrick rose over 20 stories above the top deck. Up on the bridge on the main deck, two officers monitored the satellite-guided dynamic positioning system, controlling thrusters so powerful that they could keep the 33,000-ton *Deepwater Horizon* centered over a well even in high seas. The rig’s industrial hum and loud mechanical noises punctuated the sea air as a slight breeze blew in off the water. The crew worked on

Pride of the Transocean fleet of offshore drilling rigs, *Deepwater Horizon* rides calmly on station 40 miles off the Louisiana coast. The \$560-million-dollar rig, under lease to BP, was putting the finishing touches on the oil company’s 18,000-foot-deep Macondo well when it blew out and escaping methane gas exploded. Eleven workers died in the inferno. According to the government’s estimates, by the time the well was sealed months later, over 4 million barrels of oil had spilled into the Gulf.

< Photo courtesy of Transocean

the well bore, aiming always to keep the pressure inside the well balancing the force exerted by the surrounding seabed.²

By the time the Halliburton engineer had arrived at the rig four days earlier to help cement in the two-and-a-half-mile-deep Macondo well, some crew members had dubbed it “the well from hell.”³ Macondo was not the first well to earn that nickname;⁴ like many deepwater wells, it had proved complicated and challenging. As they drilled, the engineers had to modify plans in response to their increasing knowledge of the precise features of the geologic formations thousands of feet below. Deepwater drilling is an unavoidably tough, demanding job, requiring tremendous engineering expertise.

BP drilling engineer Brian Morel, who had designed the Macondo well with other BP engineers including Mark Hafle, was also on board to observe the final stages of work at the well.⁵ In an April 14 e-mail, Morel had lamented to his colleagues, “this has been [a] nightmare well which has everyone all over the place.”⁶ BP and its corporate partners on the well, Anadarko Petroleum and MOEX USA, had, according to government reports, budgeted \$96.2 million and 51 days of work to drill the Macondo well in Mississippi Canyon Block 252.⁷ They discovered a large reservoir of oil and gas, but drilling had been challenging.

As of April 20, BP and the Macondo well were almost six weeks behind schedule and more than \$58 million over budget.⁸ The *Deepwater Horizon* was not originally meant to drill Macondo. Another giant rig, the *Marianas*, had initiated work on the well the previous October.⁹ Drilling had reached more than 9,000 feet below the ocean surface (4,000 feet below the seabed), with another 9,000 feet to go to “pay zone” (the oil and gas reservoir), when Hurricane Ida so battered the rig on November 9 that it had to be towed in for repair.

Both *Marianas* and *Deepwater Horizon* were semisubmersible rigs owned by Transocean, founded in Louisiana in 1919 as Danciger Oil & Refining Co. and now the world’s largest contractor of offshore drilling rigs.¹⁰ In 2009, Transocean’s global fleet produced revenues of \$11.6 billion.¹¹ Transocean had consolidated its dominant position in the industry in November 2007 by merging with rival GlobalSantaFe.¹²

Deepwater Horizon, built for \$350 million,¹³ was seen as the outstanding rig in Transocean’s fleet; leasing its services reportedly cost as much as \$1 million per day. Since *Deepwater Horizon*’s 2001 maiden voyage to the Gulf, it had been under contract to London-based BP (formerly known as British Petroleum). By 2010, after numerous acquisitions, BP had become the world’s fourth-largest corporation (based on revenue)¹⁴ producing more than 4 million barrels of oil daily from 30 countries.* Ten percent of BP’s output came from the Gulf of Mexico, where BP America (headquartered in Houston) was the largest producer. But BP had a tarnished reputation for safety. Among other BP accidents, 15 workers died in a 2005 explosion at its Texas City, Texas, refinery; in 2006, there was a major oil spill from a badly corroded BP pipeline in Alaska.

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*A barrel equals 42 gallons.

Deepwater Horizon had arrived at the Macondo lease site on January 31, at 2:15 p.m. It was 55 degrees, chilly and clear—the night of a full moon. About 126 people were aboard: approximately 80 Transocean employees, a few BP men, cafeteria and laundry workers, and a changing group of workers contracted for specialized jobs. Depending on the status of the well, these might include Halliburton cementers, mud loggers from Sperry Sun (a Halliburton subsidiary), mud engineers from M-I SWACO (a subsidiary of Schlumberger, an international oilfield services provider), remotely operated vehicle technicians from Oceaneering, or tank cleaners and technicians from the OCS Group. The offices and living quarters were on the two bottom decks of the rig. Helicopters flew in and out regularly with workers and supplies, landing on the top-deck helipad, and service ships made regular visits.

At its new Macondo assignment, *Deepwater Horizon* floated in 4,992 feet of water just beyond the gentle slope of the continental shelf in the Mississippi Canyon.¹⁵ The seabed far below was near-freezing, visible to the crew only via cameras mounted on the rig's subsea remotely operated vehicle. Another two and a half miles below the seabed was the prize BP sought: a large reservoir of oil and gas from the Middle Miocene era trapped in a porous rock formation at temperatures exceeding 200 degrees.¹⁶ These deepwater hydrocarbon fields, buried far below the seabed—not just in the Gulf, but in other oil-rich zones around the world, too—were the brave new oil frontier. The size of some deepwater fields was so huge that the oil industry had nicknamed those with a billion barrels or more “elephants.”¹⁷

Drilling for oil had always been hard, dirty, dangerous work, combining heavy machinery and volatile hydrocarbons extracted at high pressures. Since 2001, the Gulf of Mexico workforce—35,000 people, working on 90 big drilling rigs and 3,500 production platforms—had suffered 1,550 injuries, 60 deaths, and 948 fires and explosions.¹⁸

The rig never slept. Most workers on *Deepwater Horizon*, from BP's top “company man” down to the roustabouts, put in a 12-hour night or day shift, working three straight weeks on and then having three weeks off. Rig workers made good money for the dangerous work and long stints away from home and family. Top rig and management jobs paid well into six figures.

On the morning of April 20, Robert Kaluza was BP's day-shift company man on the *Deepwater Horizon*. On board for the first time, he was serving for four days as a relief man for Ronald Sepulvado, a veteran well-site leader on the rig. Sepulvado had flown back to shore April 16 for a required well-control class.¹⁹

During the rig's daily 7:30 a.m. operations conference call to BP in Houston, engineer Morel discussed the good news that the final cement job at the bottom of the Macondo well had gone fine.²⁰ To ensure the job did not have problems, a three-man Schlumberger team was scheduled to fly out to the rig later that day, able to perform a suite of tests to examine the well's new bottom cement seal.²¹

According to the BP team’s plan, if the cementing went smoothly, as it had, they could skip Schlumberger’s cement evaluation. Generally, the completion rig would perform this test when it reopened the well to produce the oil the exploratory drilling had discovered. The decision was made to send the Schlumberger team home on the 11:00 a.m. helicopter, thus saving time and the \$128,000 fee. As BP Wells Team Leader John Guide noted, “Everyone involved with the job on the rig site was completely satisfied with the [cementing] job.”²²

At 8:52 a.m., Morel e-mailed the Houston office to reiterate: “Just wanted to let everyone know the cement job went well. Pressures stayed low, but we had full returns on the entire job...We should be coming out of the hole [well] shortly.” At 10:14 a.m., David Sims, BP’s new drilling operations manager in charge of Macondo, e-mailed to say, “Great job guys!”

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The rest of the day would be devoted to a series of further tests on the well—positive- and negative-pressure tests—in preparation for “temporary abandonment.”* During the positive-pressure test, the drill crew would increase the pressure inside the steel casing and seal assembly to be sure they were intact. The negative-pressure test, by contrast, would reduce the pressure inside the well in order to simulate its state after the *Deepwater Horizon* had packed up and moved on. If pressure increased inside the well during the negative-pressure test, or if fluids flowed up from the well, that would indicate a well integrity problem—a leak of fluids into the well. Such a leak would be a worrisome sign that somewhere the casing and cement had been breached—in which case remedial work would be needed to reestablish the well’s integrity.

At 10:43 a.m., Morel, about to leave the rig on the helicopter with the Schlumberger team, sent a short e-mail laying out his plan for conducting the day’s tests of the well’s integrity and subsequent temporary abandonment procedures. Few had seen the plan’s details when the rig supervisors and members of the drill team gathered for the rig’s daily 11:00 a.m. pre-tour meeting in the cinema room. “Basically [we] go over what’s going to be taking place for today on the rig and the drill floor,” said Douglas Brown, chief mechanic.²³

During the rig meeting, the crew on the drill floor was conducting the Macondo well’s positive-pressure test.²⁴ The positive-pressure test on the casing was reassuring, a success.²⁵ There was reason for the mood on the rig to be upbeat. Ross Skidmore, a subsea engineer explained, “When you run the last string of casing, and you’ve got it cemented, it’s landed out, and a test was done on it, you say, ‘This job, we’re at the end of it, we’re going to be okay.’”²⁶

At noon, the drill crew began to run drill pipe into the well in preparation for the negative-pressure test later that evening.²⁷ By now, it was a sunny afternoon. Transocean’s top men on the rig, Jimmy Harrell and Captain Curt Kuchta, were standing together near the helipad, watching a helicopter gently land. Kuchta had come in from New Orleans just

* Temporary abandonment describes the process, after successful exploration, for securing the well until the production platform can be brought in for the purpose of extracting the oil and gas from the reservoir.

that morning to begin his three-week hitch. Harrell was the top Transocean man on the rig when—as now—the well was “latched up.” Captain Kuchta, who had served on the *Deepwater Horizon* since June 2008, was in command when the vessel was “unlatched” and thus once again a maritime vessel.²⁸

The helicopter landed, the doors opened, and four Houston executives stepped out to begin their 24-hour “management visibility tour.”²⁹ Harrell and Kuchta greeted the VIPs.³⁰ Two were from Transocean: Buddy Trahan, vice president and operations manager for assets, and Daun Winslow, a one-time assistant driller who had worked his way up to operations manager. BP’s representatives were David Sims, the new drilling operations manager (he had sent the congratulatory e-mail about the cement just that morning), and Pat O’Bryan, vice-president for drilling and completions, Gulf of Mexico Deepwater.³¹

At about 4:00 p.m., Harrell began his escorted tour of the *Deepwater Horizon* for the VIPs.³² He was joined by Chief Engineer Steve Bertone, on board since 2003, and senior toolpusher Randy Ezell, another top man on the rig.³³ Like Harrell, Ezell was an offshore veteran. He had worked for 23 years with Transocean³⁴ and was now the senior man in charge of the drilling floor. He had been on the rig for years. If any people knew this rig, they were Harrell, Bertone, and Ezell; they showed the VIPs around.

At 5:00 p.m., the rig crew, including toolpusher Wyman Wheeler, began the negative-pressure test.³⁵ After bleeding pressure from the well, the crew would close it off to check whether the pressure within the drill pipe would remain steady. But the pressure repeatedly built back up. As the crew conducted the test, the drill shack grew crowded.³⁶ The night crew began arriving to relieve the day shift, and Harrell brought the VIPs through as part of their tour.³⁷

“There was quite a few people in there,” said Transocean’s Winslow. “I tapped Dewey Revette on the shoulder. He was the driller master. I said, ‘Hey, how’s it going, Dewey? You got everything under control here?’

“And he said, ‘Yes, sir.’

“And there seemed to be a discussion going on about some pressure or a negative test. And I said to Jimmy [Harrell] and Randy Ezell, ‘Looks like they’re having a discussion here. Maybe you could give them some assistance.’ And they happily agreed to that.”³⁸ Bertone took over the tour, wandering on to look at the moon pool, down toward the pontoons and the thrusters.³⁹

The two shifts continued to discuss how to proceed. It was about 6:00 p.m. Jason Anderson, a tool pusher, turned to Ezell and said, “Why don’t you go eat?”⁴⁰

Ezell had originally planned to attend a meeting with the VIPs at 7:00 p.m. He replied, “I can go eat and come back.”⁴¹

Anderson was from Bay City, Texas, and had been on the rig since it was built; he was highly respected as a man who understood the finer points of deepwater well control. This was his final shift on the *Deepwater Horizon*: he had been promoted to teaching in Transocean's well-control school, and he was scheduled to fly out the next day. He told Ezell, "Man, you ain't got to do that. I've got this. Don't worry about it. If I have any problems at all with this test I'll give you a call."⁴²

"I knew Jason well," said Ezell, "I've worked with him for all those years, eight or nine years....He was just like a brother. So I had no doubt that if he had any indication of any problem or difficulty at all he would have called me. So I went ahead and ate. I did attend the meeting with the dignitaries."⁴³

Wheeler was "convinced that something wasn't right," recalled Christopher Pleasant, a subsea supervisor. Wheeler couldn't believe the explanations he was hearing. But his shift was up.⁴⁴

Don Vidrine, the company man coming on the evening shift, eventually said that another negative test had to be done.⁴⁵ This time the crew members were able to get the pressure down to zero on a different pipe, the "kill line," but still not for the drill pipe, which continued to show elevated pressure.⁴⁶ According to BP witnesses, Anderson said he had seen this before and explained away the anomalous reading as the "bladder effect."⁴⁷ Whether for this reason or another, the men in the shack determined that no flow from the open kill line equaled a successful negative-pressure test.^{48*} It was time to get on with the rest of the temporary abandonment process. Kaluza, his shift over, headed off duty.⁴⁹

At 7:00 p.m., after dinner, the VIPs had gathered in the third floor conference room with the rig's leadership. According to BP's Patrick O'Bryan, the *Deepwater Horizon* was "the best performing rig that we had in our fleet and in the Gulf of Mexico. And I believe it was one of the top performing rigs in all the BP floater fleets from the standpoint of safety and drilling performance." O'Bryan, at his new job just four months, was on board in part to learn what made the rig such a stand-out.⁵⁰ Despite all the crew's troubles with this latest well,⁵¹ they had not had a single "lost-time incident" in seven years of drilling.⁵²

The Transocean managers discussed with their BP counterparts the backlog of rig maintenance. A September 2009 BP safety audit had produced a 30-page list of 390 items requiring 3,545 man-hours of work.⁵³ The managers reviewed upcoming maintenance schedules and discussed efforts to reduce dropped objects and personal injuries: on a rig with cranes, multiple decks, and complicated heavy machinery, errant objects could be deadly.⁵⁴

Around 9:00 p.m., Transocean's Winslow proposed they all go visit the bridge, which had not been part of their earlier tour. According to David Sims, the bridge was "kind of an impressive place if you hadn't been there...[l]ots of screens...lots of technology."⁵⁵ The four

* The precise content of this particular conversation is disputed and is considered more fully in Chapter 4.

men walked outside. The Gulf air was warm and the water calm as glass. Beyond the glare of the rig's lights, the night sky glimmered with stars.

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After concluding that the negative-pressure test was successful, the drilling crew prepared to set a cement plug⁵⁶ deep in the well—3,000 feet below the top of the well.⁵⁷ They reopened the blowout preventer and began pumping seawater down the drill pipe to displace the mud and spacer* from the riser (the pipe that connected the rig to the well assembly on the seafloor below).⁵⁸ When the spacer appeared up at the surface, they stopped pumping because the fluid had to be tested to make sure it was clean enough to dump it in the Gulf, now that it had journeyed down into the well and back. By 9:15 p.m., the crew began discharging the spacer overboard.⁵⁹

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Inside the bridge, Captain Kuchta welcomed visitors Sims, O'Bryan, Trahan, and Winslow.⁶⁰ The two dynamic-positioning officers, Yancy Keplinger and Andrea Fleytas, were also on the bridge.⁶¹ Keplinger was giving the visitors a tour of the bridge while Fleytas was at the desk station.⁶² The officers explained how the rig's thrusters kept the *Deepwater Horizon* in place above the well, showed off the radars and current meters, and offered to let the visiting BP men try their hands at the rig's dynamic-positioning video simulator.⁶³

Winslow watched as the crew programmed in 70-knot winds and 30-foot seas, and hypothetically put two of the rig's six thrusters out of commission. Then they put the simulator into manual mode and let Sims work the hand controls to maintain the rig's location. Keplinger was advising about how much thrust to use. Winslow decided it was a good moment to go grab a quick cup of coffee and a smoke. He walked down to the rig's smoking area, poured some coffee, and lit his cigarette.⁶⁴

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Senior Toolpusher Randy Ezell left the evening meeting with BP feeling pleased at their praise "on how good a job we had done...How proud they were of the rig." He stopped in at the galley to get a beverage before continuing to his office. At 9:20, he called Anderson up on the rig floor and asked, "How did your negative test go?"⁶⁵

Anderson: "It went good. . . . We bled it off. We watched it for 30 minutes and we had no flow."

Ezell: "What about your displacement? How's it going?"

Anderson: "It's going fine. . . . It won't be much longer and we ought to have our spacer back."

* As described more fully in Chapter 4, a "spacer" is a liquid that separates drilling mud used during the drilling operations from the seawater that is pumped in to displace the mud once drilling is complete.

Ezell: "Do you need any help from me?"

Anderson: "No, man. . . . I've got this. . . . Go to bed. I've got it."

Ezell concluded: "Okay."⁶⁶

Ezell walked to his cabin. He had worked with Anderson since the rig came from the shipyard. He had complete confidence in him. "Jason was very acute on what he did. . . he probably had more experience as far as shutting in for kicks than any individual on the *Deepwater Horizon*." So Ezell prepared for bed, called his wife, and then turned off the lights to watch a bit of TV before going to sleep.⁶⁷

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Up on the bridge, O'Bryan was taking his turn on the simulator.⁶⁸ Sims had stepped to the opposite side of the bridge when he felt a distinct high-frequency vibration.⁶⁹

Captain Kuchta looked up and remarked "What's that?" He strode to the port-side door and opened it.⁷⁰ Outside, O'Bryan could see the supply vessel *Bankston* glistening with what looked like drilling mud.⁷¹ The captain shut the door "and told everybody to stay inside."⁷² Then there began a hissing noise.⁷³

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BP's Vidrine had headed back to his office to do paperwork. He had been there about 10 to 15 minutes when the phone rang. It was Anderson, who reported "they were getting mud back and were diverting to the gas buster." Vidrine grabbed his hard hat and started for the drill floor. By the time he got outside, "[t]here was mud and seawater blowing everywhere, there was a mud film on the deck. I decided not to continue and came back across."⁷⁴

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Down in Ezell's cabin, he was still watching TV when his phone rang. It was assistant driller Steve Curtis calling, also from the rig floor. "We have a situation. . . . The well is blown out. . . . We have mud going to the crown." Ezell was horrified. "Do y'all have it shut in?"⁷⁵

Curtis: "Jason is shutting it in now. . . . Randy, we need your help."

Ezell: "Steve, I'll be—I'll be right there."⁷⁶

He put on his coveralls, pulled his socks on, and opened the door to go across the hall to his office for his boots and hard hat. Once in the hall, "a tremendous explosion... blew me probably 20 feet against a bulkhead, against the wall in that office. And I remember then that the lights went out, power went out. I could hear everything deathly calm."⁷⁷

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Up on the main deck, gantry crane operator Micah Sandell was working with the roustabouts. “I seen mud shooting all the way up to the derrick. . . . Then it just quit. . . I took a deep breath thinking that ‘Oh, they got it under control.’ Then all the sudden the. . . mud started coming out of the degasser. . . so strong and so loud that it just filled up the whole back deck with a gassy smoke. . . loud enough. . . it’s like taking an air hose and sticking it in your ear. Then something exploded. . . that started the first fire...on the starboard side of the derrick.”⁷⁸

Sandell jumped up and turned off the crane cab’s air conditioner, worried that the gas would come in. “And about that time everything in the back just exploded at one time. It. . . knocked me to the back of the cab. I fell to the floor. . . put my hands over my head and I just said, ‘No, God, no.’ Because I thought that was it.”⁷⁹ Then the flames pulled back from his crane and began to shoot straight up, roaring up and over the 20-story derrick.⁸⁰

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Down in the engine control room, Chief Mechanic Douglas Brown, an Army veteran employed by Transocean, was filling out the nightly log and equipment hours. He had spent the day fixing a saltwater pipe in one of the pontoons. First, he noticed an “extremely loud air leak sound.” Then a gas alarm sounded, followed by more and more alarms wailing. In the midst of that noise, Brown noticed someone over the radio. “I heard the captain or chief mate, I’m not sure who, make an announcement to the standby boat, the *Bankston*, saying we were in a well-control situation.”⁸¹ The vessel was ordered to back off to 500 meters.⁸²

Now Brown could hear the rig’s engines revving. “I heard them revving up higher and higher and higher. Next I was expecting the engine trips to take over. . . . That did not happen. After that the power went out.” Seconds later, an explosion ripped through the pitch-black control room, hurtling him against the control panel, blasting away the floor. Brown fell through into a subfloor full of cable trays and wires. A second huge explosion roared through, collapsing the ceiling on him. All around in the dark he could hear people screaming and crying for help.⁸³

Dazed and buried in debris, he pulled himself out of the subfloor hole. In front of him appeared Mike Williams, chief electronic technician, blood pouring from a wound on his forehead, crawling over the rubble, screaming that he had to get out.⁸⁴

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Steve Bertone, the rig’s chief engineer, had been in bed, reading the first sentence of his book, when he noticed an odd noise. “As it progressively got louder, it sounded like a freight train coming through my bedroom and then there was a thumping sound that consecutively got much faster and with each thump, I felt the rig actually shake.”⁸⁵ After a loud boom, the lights went out.⁸⁶ He leapt out of bed, opening his door to let in the emergency hall light so he could get dressed.⁸⁷ The overhead public-address system crackled to life: “Fire. Fire. Fire.”⁸⁸

The air smelled and tasted of some kind of fuel. A second explosion roared through, flinging Bertone across his room. He stood up, pulled on his coveralls, work boots, and hard hat, and grabbed a life vest. Out in the hall, clogged with debris from blown-out walls and ceilings, four or five men stood in shock. Bertone yelled to them to go out by the port forward or starboard forward spiral staircases and report to their emergency stations. He ran toward the bridge.⁸⁹

He went to the portside back computer, the dynamic positioning system responsible for maintaining the rig's position. "I observed that we had no engines, no thrusters, no power whatsoever. I picked up the phone which was right there and I tried calling extension 2268, which is the engine control room. There was no dial tone whatsoever." It was then that Bertone looked out to the bridge's starboard window. "I was fully expecting to see steel and pipe and everything on the rig floor." "When I looked out the window, I saw fire from derrick leg to derrick leg and as high as I could see. At that point, I realized that we had just had a blowout."⁹⁰

Fleytas hit the general alarm.⁹¹ The alarm went off: "Report to emergency stations and lifeboats." The rig crew heard: "This is not a drill. This is not a drill."⁹² Fleytas, realizing that the rig had not yet issued a Mayday call, sent it out.⁹³ Out in the dark of the Gulf, three friends on the 31-foot *Ramblin' Wreck* were out on the water for a day of tuna fishing.⁹⁴ Around 9:45 p.m., Bradley Shivers trained his binoculars at a brilliant light in the distance and realized it must be an oil rig on fire.⁹⁵ On their radio, they heard, "Mayday, Mayday, Mayday, this is the *Deepwater Horizon*. We are on fire."⁹⁶ At that moment they "heard and felt a concussive sonic boom."⁹⁷ The *Ramblin' Wreck* headed to the scene, their first tuna outing of the year cut short.⁹⁸

Bertone was now back to his station on the bridge, thinking, "The engines should be starting up because in approximately 25 to 30 seconds two engines start up, come online. . . . There was still no power of any kind. No engines starting; no indication of engines starting."⁹⁹

At that moment, the water-tight door to his left banged open and he heard someone say, "The engine room ECR [engine control room] and pump room are gone. They are all gone." Bertone turned around, "What do you mean gone?" The man speaking was so coated in blood Bertone had no idea who he was. Then he recognized the voice. It was Mike Williams. Bertone saw how badly lacerated Williams's forehead was, grabbed a roll of toilet paper from the bathroom, pressed it on the wound to staunch the bleeding, and ordered, "Hold this here."¹⁰⁰

Then he went back to his station and looked at his screen. "There was still nothing, no engines starting, no thrusters running, nothing. We were still [a] dead ship."¹⁰¹

He heard the water-tight door slam again and saw another man soaked in blood, holding a rag to his head, repeating, "I'm hurt. I'm hurt bad, Chief. I'm hurt real bad." It was the voice of Brent Mansfield, a Transocean marine engineer. Bertone pulled back Mansfield's

hand holding a rag, saw the head wound, and ran over to the bridge door and yelled down to the life-vessel area, "We need a medic up here now."¹⁰²

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After the explosion, Randy Ezell lay buried under the blown-out walls and ceilings of the toolpusher's office. The room was dark and smoky, the debris atop him so heavy he could barely move. On the third try, adrenalin kicked in. "I told myself, 'Either you get up or you're going to lay here and die.'" Pulling hard on his right leg, he extricated it and tried to stand up. "That was the wrong thing to do because I immediately stuck my head into smoke. . . . I dropped back down. I got on my hands and knees and for a few moments I was totally disoriented." He wondered which way the door was. He felt air. He crawled through the debris toward the door and realized the "air" was methane. He could feel the droplets. He was crawling slowly atop the rubble in the pitch-black hall when he felt a body.¹⁰³

Ezell then saw a bobbing beam of light. Stan Carden, the electrical supervisor, came round the corner. Carden had a light that bounced off shattered walls and collapsed ceilings in the pitch-black corridor, giving glimpses into rooms on each side wrecked by the power of the blast.¹⁰⁴ Stumbling into what was left of the hall was Offshore Installation Manager Jimmy Harrell, who had been in the shower when the rig exploded;¹⁰⁵ he had donned coveralls, and now was groping his way out of what was left of his room. "I think I've got something in my eyes," Harrell said. He had no shoes. "I got to see if I can find me some shoes."¹⁰⁶

Carden and Ezell tugged debris off the man they now recognized as Wyman Wheeler. Chad Murray, Transocean's Chief Electrician, also appeared in the hall with a flashlight, and was immediately dispatched to find a stretcher for the injured man.¹⁰⁷

Believing it would save time to walk Wheeler out, Ezell slung Wheeler's arm around his shoulder. Wheeler groaned, "Set me down Y'all go on. Save yourself."¹⁰⁸

Ezell said, "No, we're not going to leave you. We're not going to leave you in here."¹⁰⁹

Just then, they heard another voice from under the rubble: "God help me. Somebody please help me." Near the ruins of the maintenance office the flashlight picked out a pair of feet jutting from the rubble. It was the visiting Transocean manager, Buddy Trahan, badly injured. By now Murray was there with a stretcher. Ezell, Carden, and Murray dragged away the remains of ceilings and walls trapping Trahan and loaded him on the stretcher. Carden and Murray carried him through the smoke and dark to the bow of the rig and the lifeboats.¹¹⁰

Outside, the derrick fire roared upward into the night sky, an inferno throwing off searing heat and clouds of black smoke. The blinding yellow of the flames was the only illumination except for the occasional flashlight. The rig's alarms were going off, while over the public announcement system Keplinger yelled, "THIS IS NOT A DRILL!"¹¹¹ As the

crew struggled out of the blasted quarters, galley, and offices, in various states of undress, they converged in a chaotic and panicked mass at the lifesaving vessels, putting on life vests.¹¹²

Sandell, the gantry crane operator, had escaped and come around the port side of the deck to the life vessels. “It was a lot of screaming, just a lot of screaming, a lot of hollering, a lot of scared people, including me, was scared. And trying to get people on boats. It was very unorganized—we had some wounded we was putting in the boat. Had people on the boat yelling, ‘Drop the boat, drop the boat,’ and we still didn’t have everybody on the boat yet. We was still trying to get people on the boat and trying to calm them down enough to—trying to calm them down enough to get everybody on the boat. And there was people jumping off the side. We was trying to get an accurate count and just couldn’t get an accurate count because people were just jumping off the boat.”¹¹³

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On the *Bankston*, Captain Alwin J. Landry was on the bridge updating his log when his mate noticed the mud. Landry stepped out and saw “mud falling on the back half of my boat, kind of like a black rain.” He called the *Deepwater Horizon* bridge to say, “I’m getting mud on me.” Landry instructed his crew to get inside. The *Deepwater Horizon* called back and told him to move back 500 meters.¹¹⁴ A crew member noticed a mud-covered seagull and egret fall to the deck.¹¹⁵ Shortly after, Landry saw the rig explode. Before the ship could move away, his crew had to detach the long mud transfer hose connecting them to the rig.¹¹⁶

As they scrambled to disconnect, the *Bankston* slowly moved 100 meters back, then 500 meters. As the rig went dark, and secondary explosions rocked the decks, the *Bankston* turned on its searchlight. Landry could see the *Deepwater Horizon* crew mustering by the portside life vessels. “That’s when I seen the first of three or four people jump to the water from the rig.”¹¹⁷

One of those was Gregory Meche, a compliance specialist. After five minutes of the chaos around the lifeboats, and a series of large explosions, he headed down to the lower deck. He jumped into the water.¹¹⁸

Antonio Gervasio, the *Bankston*’s relief chief, and two others began launching the ship’s fast rescue craft.¹¹⁹ Within a minute or two of the explosions, they got the boat lowered into the water, and noticed how calm the Gulf was.¹²⁰ “I saw the first person jump in the water. So I told one of the guys to keep an eye on him.”¹²¹ The rig life jackets were reflective, and as the fast craft made its first sweep round from one side of the burning rig to the other, they hauled Meche and two or three others out of the water.¹²²

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Back on the rig, Transocean’s Winslow had made his way from the coffee shop to the lifeboats, surviving the second blast’s wave of concussive force, which blew in the

corridor's walls and ceilings. On the deck, a firestorm of flames roared in the night sky above the derrick.¹²³

Winslow directed the dazed crew toward the covered life-saving vessels, instructing the first arrivals, "We need to make sure we get a good head count." Seeing Captain Kuchta standing at the starboard bridge door, he ran up, and said people should evacuate. Kuchta answered, "Okay." Panic was building as the derrick fire roared. Winslow heard someone yelling that people were jumping overboard. As the lifeboats filled, crew members were screaming to lower the boats.¹²⁴ But not everyone was there.¹²⁵ Carden and Murray appeared with Trahan on the stretcher and handed him into the vessel, where he was laid out.¹²⁶ People in the boat screamed, "We've got to go! We've got to go!"¹²⁷

A man in his life vest was hanging on the rig handrails, preparing to drop overboard. Winslow said, "Hey, where are you going? There's a perfectly good boat here. Do you trust me?" He and another crew member coaxed the man down and into one of the life vessels, where people were still screaming to leave. Down below in the water, the crew could see swaths of burning oil rising and falling with the gentle swell. The jumpers were visibly bobbing and swimming in their life vests shining with fluorescent strips. The *Bankston's* fast rescue craft was hauling them out of the water.¹²⁸

By now, Winslow began to wonder why the derrick was still roaring with flames. Hadn't the blowout preventer been activated, sealing off the well and thus cutting off fuel for the conflagration? He headed to the bridge. Kuchta said, "We've got no power, we've got no water, no emergency generator."¹²⁹

Steve Bertone was still at his station on the bridge and he noticed Christopher Pleasant, one of the subsea engineers, standing next to the panel with the emergency disconnect switch (EDS) to the blowout preventer.¹³⁰

Bertone hollered to Pleasant: "Have you EDSed?"¹³¹

Pleasant replied he needed permission. Bertone asked Winslow was it okay and Winslow said yes.¹³²

Somebody on the bridge yelled, "He cannot EDS without the OIM's [offshore installation manager's] approval."¹³³

Harrell, still dazed, somewhat blinded and deafened, had also made it to the bridge, as had BP's Vidrine.¹³⁴ With the rig still "latched" to the Macondo well, Harrell was in charge. Bertone yelled, "Can we EDS?" and Harrell yelled back, "Yes, EDS, EDS."¹³⁵

Pleasant opened the clear door covering the panel and pushed the button.

Bertone: "I need confirmation that we have EDSed."

Pleasant: "Yes, we've EDSed."

Bertone: "Chris, I need confirmation again. Have we EDSed?"

Pleasant: "Yes."

Bertone: "Chris, I have to be certain. Have we EDSed?"

Pleasant: "Yes." He pointed to a light in the panel.¹³⁶

By now BP's O'Bryan, who saw red lights on the EDS panel, had put on a life vest. He looked at his colleague, Sims, and said they should head to the lifeboats. Outside, the conflagration continued to rage, a brilliant blinding yellow that threw off a deafening roar and blistering heat. As the fire raged on, new explosions rang out, spewing hot debris. O'Bryan, unsure of which life vessel he should board, recalled being given a notice at his safety orientation listing his boat. He pulled it out of his back pocket: Lifeboat 2. He figured out which one it was, stepped into the dark interior and squeezed into a seat.¹³⁷ Some people were screaming, "We've got to go. We've got to go."¹³⁸ BP's Robert Kaluza had made his way up from his cabin and had boarded a lifeboat.¹³⁹

Winslow had returned to the lifeboats. He yelled over the noise to the panicked crew members, "We've got plenty of time." Then he looked up at the sky-high flames engulfing the derrick: "Right about that time is when the traveling equipment, the drilling blocks and whatnot on the derrick fell. They were probably 40 to 50 foot in the air, you know, weigh 150,000 pounds, and they didn't make any noise [when they fell]. So at that time, I instructed the boat to my right, which would have been the port survival boat, to depart. They did."¹⁴⁰

Winslow then helped lower his own life vessel over approximately 125 feet to the Gulf.¹⁴¹ Winslow discovered the lifeboat windows were obscured by mud.¹⁴² He opened the hatch and pointed the coxswain toward the *Bankston* vessel; he then clambered out onto the outside so that he could grab the rope thrown to him by the *Bankston* crew.¹⁴³ The *Bankston* had made radio contact and Captain Landry instructed the vessels to come round to his starboard side, sheltered from the rig.¹⁴⁴

* * * *

The rig life vessels were not the only small craft fleeing the firestorm. Four high-school buddies out fishing had sailed up to the rig around 7:30 p.m. on their 26-foot catamaran and settled in by the pontoons.¹⁴⁵ The rig's blazing lights attracted small fish, which in turn attracted tuna. About two hours later, the group noticed water flowing out of the rig's pipes, followed by blowing gas. One young man had worked on rigs and began yelling, "Go, go, go, go, GOOOO!" The owner pointed the boat away from the rig and gunned the engine. Then the lights went out and the rig blew.¹⁴⁶

* * * *

Back up on the *Deepwater Horizon* bridge, Bertone asked Captain Kuchta's permission to go to the standby generator room to try to manually start it. He assumed that the EDS had worked. "My thinking at that point was the BOP [blowout preventer] had unlatched, what remaining fuel would be in the riser it would burn away and we were going to need power, as well as fire pumps."¹⁴⁷

As Bertone left, Mike Williams, his head wounds no longer bleeding, said, "You're not going alone, Chief."

"Well, come on."¹⁴⁸

Paul Meinhart, a motorman, joined them. As Bertone ran to the standby generator room, he looked up at the derrick where the crown should be. "I could see nothing but flames way past the crown." The noise, heat, and smoke were ferocious. The deck was slick, almost an inch and a half deep with something thick like mucus. Bertone thought to himself as he tried not to slip, "Why is all this snot on the deck." They passed the blowout-preventer house, a huge door that seemed 80 to 90 feet tall and 50 feet wide; they looked down into the moon pool and saw only solid flames.¹⁴⁹

Inside the standby generator room, Bertone flipped the switch from automatic to manual, hitting the reset and the start button. "There was absolutely no turning over of the engine. I tried it again, the reset button and the start. Again, nothing happened." He reset other functions, and turned the switch for the automatic sync on the standby generator to manual. "I ran back to the panel and again, tried the reset and the start. There was no turning over of the engine whatsoever." They made yet another effort using different batteries. Nothing. Bertone yelled, "That's it. Let's go back to the bridge. It's not going to crank."¹⁵⁰

When they opened the water-tight door to walk back out to the bridge, the heat struck like a blast furnace. The derrick fire roared into the sky, billowing black smoke. The rig had not unlatched from the well. On the bridge, Kuchta was standing with the door open watching the lifeboat station. The first lifeboat had departed, while the second vessel was visible in the burning water just pulling away from the rig.¹⁵¹

Bertone returned to the bridge, looked through the open door, and yelled to Williams and Meinhart, "That's it, abandon ship. Let's go." He turned to Keplinger and Fleytas, still manning their radios. He shouted over the noise, "That's it. Abandon ship. Let's go, now."¹⁵²

* * * *

Randy Ezell had stayed with Wyman Wheeler in the blasted-out hallway in the dark. "I told him I wasn't going to leave him and I didn't. And it seemed like an eternity, but it was only a couple of minutes before they [Murray and Carden] came back with the second stretcher. We were able to get Wyman on that stretcher and we took him to the bow of the rig." They emerged from the living quarters to feel the blast of the fire roaring skyward, the sound deafening, the heat roasting. "[T]he first thing I observed is both of the main lifeboats had already been deployed," said Ezell, "and they left. I also looked to my left and I saw Captain [C]urt and a few of his marine crew starting to deploy a life raft. And we continued down the walkway till we got to that life raft and we set the stretcher down."¹⁵³ They got a life vest onto Wheeler.¹⁵⁴

Chief Mate David Young and Bertone “hooked the life raft up and proceeded to crank it up out of its lift, rotated [it] around to the side of the rig and then drop[ped] it—drop[ped] it out so that you could inflate the raft and you could be clear of the rig.” A rope attached to a balky shackling device refused to give. Bertone yelled for a knife to cut the rope. Nobody had one. No pocket knives were allowed on the rig. Williams found a gigantic nail-clipper-like device and used it to unscrew the stuck shackle, freeing the rope. The life raft moved out over the side of the rig. Young got in. Behind them, explosions punctuated the heat, noise, and dark. Thick, acrid smoke was rolling over the deck.¹⁵⁵

Bertone rushed over to the gurney and with Ezell’s help maneuvered Wheeler toward the raft. The two men shoved Wheeler off and in. More explosions and searing heat engulfed them. The flames were spreading further up and around the rig toward them. Bertone leaped in the life raft. Even through his leather gloves he could feel the heat. Fleytas jumped in and the raft lurched back and forth. She cried out, “We’re going to die. We’re going to die.” Bertone felt the same way as the raft filled with smoke and the flames leapt closer. “I honestly thought we were going to cook right there.” The life raft rocked back and forth in the air between the rig decks, and then began—herky-jerky—to descend.¹⁵⁶

They touched the water, which was ablaze. Someone yelled, “Where are the paddles?” Bertone jumped out and grabbed the rope and began swimming, pulling the life raft away from the rig. Murray and Minehart jumped into the water to help pull the raft along. Bertone looked up and saw “a tremendous amount of smoke bellowing out from under the rig.” At that moment boots appeared out of the smoke: it was Captain Kuchta, jumping into the water. Unable to get into the raft in the confusion, he leaped over 100 feet. He splashed into the Gulf five feet from Bertone. Then a second person came flying through the air, out of the thick smoke, crashing into the water: Keplinger had jumped, too.¹⁵⁷

By now, Bertone and his men had managed to pull the life raft far enough away from the rig that they could see the circular helipad silhouetted against the flames. Bertone could see someone running at full speed across the helipad deck and then leaping off the rig. It was Mike Williams, the electronics technician.¹⁵⁸ Williams splashed down nearby, resurfaced, and began swimming toward the *Bankston*.¹⁵⁹

Bertone felt the life raft no longer moving forward.¹⁶⁰ So did Fleytas. She rolled out of the raft into the water and began to swim.¹⁶¹ Someone hollered, “The painter line is tied to the rig.”¹⁶² Bertone could see the painter line go taut. Murray screamed, “Help. We need help over here.”¹⁶³

Bertone spotted the *Bankston’s* fast rescue craft, its two lights flashing 50 or 60 yards away. The boat had stopped to haul two men from the water. Bertone and others screamed, “We need a knife. We need a knife.” As the rescue craft neared, Kuchta swam to get a large foldable pocket knife, swam back, and cut the rope.¹⁶⁴ Heat and smoke boiled out from the rig.

Murray and Carden tied a rope to the fast rescue craft, which towed them to the *Bankston*. Bertone helped lift the injured man (whom he finally learned was Wheeler) onto a stretcher

on the flat bottom of the rescue craft.¹⁶⁵ The *Bankston* crew then used its crane to gently lift the stretcher to the deck. By 11:45 p.m., the life boats were empty.

Captain Kuchta went directly to the bridge, where he worked with others “to see who had firefighting capacity,” among other matters.¹⁶⁶ Sims and Winslow were already there, organizing BP’s and Transocean’s response.¹⁶⁷ Harrell remained on the main deck with the traumatized rig crew, many still half dressed, lacerated, or soaked from being in the sea. The crew filled the 260-foot *Bankston*’s lounge, galley, and parts of the main deck, including a temporary medical area.¹⁶⁸ Some lay in the bunks.¹⁶⁹ The *Bankston* crew pulled out whatever dry clothes and boots they had, and handed them to the survivors.¹⁷⁰ With both life vessels and the life raft secured to the *Bankston*, the *Deepwater Horizon* leaders could try to take muster.¹⁷¹ There had been 126 people on the rig when the well blew out.¹⁷² In the confusion, no one yet knew exact counts, but conspicuously missing were those working the drill floor.

* * * *

The *Bankston* was now jammed with the survivors.¹⁷³ Some cried, others prayed—grateful to be alive. Bertone went out to the makeshift hospital on the main deck to tend to Mansfield, prostrate on the floor, his head swathed in bandages and gauze, his neck in a brace, his mouth covered with an oxygen mask. Bertone stayed with him, adjusting his oxygen mask and keeping him conscious. On a bed nearby was Buddy Trahan and Bertone talked to him, to keep him awake, too.¹⁷⁴

When the first Coast Guard helicopter arrived at 11:22 p.m., it lowered a “rescue swimmer” to oversee medical evacuation of the injured.¹⁷⁵ Bertone helped to move Trahan, who was severely injured, onto a gurney.¹⁷⁶ More helicopters would be coming to evacuate the 16 injured crew members to hospitals on the mainland.¹⁷⁷

On board the *Bankston*, the atmosphere was grim. The crew was forbidden to call home until there was more definitive information.¹⁷⁸ By 11:30 p.m., the managers had taken a final muster and 11 men were missing: Jason Anderson, Dale Burkeen, Donald Clark, Stephen Curtis, Roy Kemp, Gordon Jones, Karl Dale Kleppinger, Blair Manuel, Dewey Revette, Shane Roshto, and Adam Weise.

The survivors sat on the boat in shock and watched the firestorm on the rig rage unabated, its plume of black smoke boiling up high into the night. At 1:30 a.m., the rig listed and rotated in the wake of more secondary explosions. Work boats, which had begun arriving and spraying water on the rig in response to the Mayday call, moved back.¹⁷⁹ By 2:50 a.m., the *Deepwater Horizon* had spun 180 degrees and, its dynamic positioners dead, moved 1,600 feet from the well. By 3:15 a.m., when the U.S. Coast Guard cutter *Pompano* arrived on the scene,¹⁸⁰ the rig was listing heavily. Dennis Martinez realized his dead father’s ring, which he removed only when working, was still on the rig.¹⁸¹

The three men in the *Ramblin’ Wreck* had continued to scour the waters near the rig, looking for survivors or the dead. Several times, they spotted what they thought might be



"I could see nothing but flames way past the crown," chief engineer Steve Bertone recalled of the dramatic moments before he ordered crew members to abandon the rig. Of the 115 survivors, 16 were seriously injured and medevaced to hospitals. Ninety-nine others, including Bertone, were transported to the mainland by the rescue vessel *Bankston*. Roughly 36 hours after the first explosion, *Deepwater Horizon* sank to the bottom. It was April 22—Earth Day.

Gerald Herbert/Associated Press

a body, only to find it was debris.¹⁸² They heard rumbling sounds coming from deep below the surface of the water—possibly underwater explosions as the rig burned, exploded, listed, and drifted. Frightened, they still kept to their search. After rescue boats came on the scene, they ferried medical supplies between one of those and the *Bankston*. At 3:00 a.m., the three fishermen headed home.

On the *Bankston*, the *Deepwater Horizon* crew deeply wished they could do the same. As the largest boat in the vicinity, the *Bankston* had been ordered by the Coast Guard to stay put while the search and rescue effort unfolded. The search helicopters buzzed overhead, methodically surveying one sector after another. Once the 16 injured were evacuated, said Bertone, "[I] made my way up to one of the upper levels and sat there and watched the rig burn."¹⁸³ As oil and gas exploded up and out of the riser, the towering flames set fire to tanks and pipes, sending yet more roiling black smoke high into the sky.

Sitting there hour after hour watching the conflagration with all its cascading smaller explosions was "one of the most painful things we could have ever done," said Randy Ezell. "To stay on location and watch the rig burn. Those guys that were on there were

our family. It would be like seeing your children or your brothers or sisters perish in that manner. And that—that put some mental scarring in a lot of people’s heads that will never go away. I wish that we could, to the bare minimum, have moved away from the location or something where we didn’t just have to sit there and review that many hours. That was extremely painful.”¹⁸⁴

Not until 8:13 that morning, when many boats were on the scene, did the *Bankston* get permission to set sail with the 99 survivors on board for Port Fourchon, Louisiana, the sprawling oil-supply depot that was its home base. The Coast Guard’s coordinated search had located no further crew—dead or alive. An hour into the *Bankston*’s 114-mile journey back to shore, it stopped at the *Ocean Endeavor* rig to take on two medics.¹⁸⁵ BP’s Sims and Transocean’s Winslow, along with subsea engineers Mark Hay and Chris Pleasant, debarked to await the *Max Chouest*. They would return to the burning rig and dispatch a remotely operated vehicle down to the burning rig’s blowout preventer. The plan was to activate it with a so-called “hot stab” of hydraulic fluid to finally close in the wellhead.¹⁸⁶

It was a clear spring day as the *Bankston* sailed along through the Gulf, passing the many offshore platforms that dot its blue waters. At 2:09 p.m., the *Bankston* pulled in at the gargantuan Matterhorn production rig to take on more supplies: tobacco, water, and coveralls.¹⁸⁷ Officials from the Coast Guard and Minerals Management Service also boarded. There was still almost a 12-hour journey to Port Fourchon. Officials intended to gather information while memories were still fresh. At 6:35 p.m., the federal officials began conducting interviews, asking each crew member to write a witness statement describing the events they experienced leading up to the blowout and then the abandonment of the rig. The *Bankston* chugged toward the Louisiana coast as night fell. The crew, speaking among themselves, wondered how such a calamity had befallen their rig.

At 1:27 a.m. on Earth Day, Thursday, April 22, 27 hours after the crew had fled the exploding *Deepwater Horizon*, the *Bankston* berthed in slip 1 at the C-Port terminal at Port Fourchon.¹⁸⁸ The exhausted men and women walked on to land. Arrayed before them was a table stacked with forms and surrounded by uniformed officials and company managers. Beyond that stood a long row of portable toilets. As each crew member walked up, he or she was handed a small plastic cup. Per federal regulations, they would all be drug-tested.¹⁸⁹ The investigation of the *Deepwater Horizon* disaster had begun.