Chapter 1

Night of Horror, Day of Triumph

Mike Williams just finished a day of routine maintenance on the offshore drilling rig Deepwater Horizon. Short on sleep, because today was the day he was rotating from the night to day shifts, Williams was testing and repairing electrical equipment, then filled in some overdue paperwork. By 9:30 that night, he was in his electronics shop, talking to his wife on the phone. Williams was the chief electronics engineer on the rig, which was in the middle of the Gulf of Mexico drilling a well for the oil giant BP PLC. He'd been away for about 10 days and had another 10 to go before he'd be heading home.

Through the phone Williams' wife heard someone over a loudspeaker announce that gas levels on the Horizon were high. "Do you need to go take care of that?" she asked her husband. He downplayed

the importance of the warning. "We'd gotten them so frequently that I'd become immune to them," Mike Williams said afterward. "I didn't even hear them anymore, especially with this well. With this well, we were getting gas back all the time."

Just a few months before the Horizon had triumphantly completed the deepest well in history, in a BP discovery called the Tiber field. The Horizon then moved to this spot, about 42 miles off the coast of Louisiana, to drill in a part of the Gulf called Mississippi Canyon. The well was called Macondo, after the fictional "city of mirrors" in Colombian author Gabriel Garcia Marquez' masterpiece *One Hundred Years of Solitude*. The city, in the end, is destroyed by a hurricane. The Transocean Inc. rig and crew, hired by BP, had hit oil at Macondo weeks before and had spent April 20th preparing to plug the well with cement in order to move on to the next hole. BP would come back later to tie Macondo up to an oil production platform that would harvest the crude. BP press officers were preparing a press release announcing the find.

Williams soon heard a loud hissing noise and became concerned. He told his wife it was time to hang up and find out what was going on. He assumed the hiss was some sort of hydraulic leak, nothing particularly dangerous.

Doug Brown, the chief mechanic working in the engine control room next door, heard it too. Over in the living quarters, Stephen Bertone had just finished a shower, and was lying on his bed, about to begin reading a book, when the hissing began. It grew louder and louder until it sounded like a freight train storming through his room. The hiss was soon followed by a cacophony of alarms. Then a voice over the P.A. system warned a nearby service ship to back away from the Horizon because the rig was in a "well control situation," a mundane-sounding term that really means disaster could be moments away.

As Williams pushed back from his desk to find out what was wrong, the entire rig began to shake. His computer monitor exploded, and all the lights in his room popped, leaving him—and everyone else

on the rig—in the dark. He headed for the door as the hiss got louder and louder; he now realized the sound came from the ship's engines which were feeding on the natural gas that filled the air. "It was higher than I could possibly describe. It was spinning so fast," Williams said. Suddenly the spinning engines stopped and a huge explosion rocked the Deepwater Horizon, blowing the fire-safe door to Williams' shop off its hinges and directly into the electronics technician, knocking him back several feet against the back wall and to the floor.

The blast threw Brown against his control panels, and then down through a hole that opened on the floor. "I was wondering what was happening. I was confused. I was hurting. I was dazed, and I proceeded to try to get up and the second explosion happened." That blast threw him into the hole a second time, and the ceiling caved in upon him.

After the first explosion, Bertone put on his boots, life vest and hard hat and headed for the door; he could smell and taste fuel in the air. He knew it was an emergency and that he had a muster station to get to, and possibly a fire to battle. Then there was the second boom. The hallway was strewn with debris. He headed for the bridge.

Williams was crawling through the darkness toward the door of the electronics shop, gasping for breath as the CO_2 systems, designed to starve any fire of oxygen, also starved his own lungs. He held a pen-light between his teeth, but it failed to cut through the smoke-filled darkness. He made it through his exploded doorframe, and headed to the next fire door. As he reached for that handle, the second blast blew the second door off its hinges, sending another wall of steel hurtling into his body. "The doors were beating me to death," Williams, a burly, goateed man with ruddy skin, said. "Two doors in a row hit me right in the forehead. My arm wouldn't work and my left leg wouldn't work, I couldn't breathe and I couldn't see."

Williams crawled, blind, across the bare grid where floor panels had once been. He crawled over the bodies of two men he couldn't identify, nor help. Brown, who had pulled himself out of the hole in the floor, was crawling beside Williams, both searching for a way out

and air. They found the exit, found air to breathe, and turned to head upwind of the fire and smoke. Williams paused to wipe blood from his eyes, and found the walkway before him, the railing, and entire wall had been blown away in the explosion. The voice of Andrea Fleytas, the rig's dynamic positioning officer, was blaring over the PA system, calling "Mayday, Mayday."

Brown helped Williams along. "He was dazed, confused. He was screaming he had to get out of here, and he had a wound on his forehead and he was bleeding profusely," said Brown. The hissing had turned into a roar, and Williams could see that the doghouse, a storage and break room on the rig floor, and half the derrick, which rises 242 feet into the sky, were aflame. "At that moment, I realized there was a blowout," Williams said. He eyed an empty lifeboat in the distance and, in his terror, flirted with the notion of jumping in and launching it to save himself. Instead, he and Brown headed for the bridge, the emergency station they had rehearsed going to in so many drills. "I had responsibilities," Williams said.

Brown and Williams reached the bridge, which was in complete chaos. "They were trying to get systems going. They were trying to get control back," Brown said. There were no engines, no thrusters, no telephones—no power at all. When Bertone arrived on the bridge he heard someone yelling, "The engine room, ECR, and pump room are gone. They're all gone." The man was covered in blood and Bertone didn't recognize him.

"What do you mean, gone?" Bertone demanded.

"They've blown up. They're all gone. They've blown up."

It was then that Bertone recognized the voice of Michael Williams, who was also screaming at the captain, "We need to abandon ship now!" Bertone tried to staunch the bleeding from Williams' forehead with toilet paper. Captain Carl Kuchta told them to remain calm as he tried to figure out what to do about the lost power. The only way to save the rig would be to get the engines going again so they could fight the fire.

Bertone volunteered to head back toward the fire and try to start the backup generator, the only hope of saving the Horizon. Williams told him he could not go alone. He grabbed Bertone's shirt, and they headed through the door toward the blaze. The emergency generator was across the deck. The men tried repeatedly to start it up. They failed. When they returned to the bridge, Captain Kuchta determined the fire was out of control and ordered the remaining crewmembers to abandon ship.

Williams, Bertone, and Fleytas left the bridge only to find that both lifeboats at their end of the rig had already been launched. The fire blazed between them and the remaining two. The air was popping and sizzling, pieces of hot metal rained down on them, and the flames were starting to wrap around the rig in search of oxygen.

With no lifeboats, the crewmembers found the inflatable emergency rafts, and put an injured mate on a stretcher aboard the first. Bertone and several others climbed in with him and they were lowered into the water. The fire was so hot now that Williams decided there wasn't time to launch another raft. Fleytas, still on deck, was yelling, "We're going to die!"

"I honestly didn't believe that we would survive trying to deploy a life raft. I decided we can stay here and die or we can jump," Williams recalled.

He turned to Fleytas and told her it was time to run and jump. She said she couldn't possibly jump the 10 stories from the blazing rig to the dark waters below. "I said, 'Watch me then.' I took off running, and I jumped," Williams said. Fleytas followed.

By the following day, 11 crewmembers were dead and dozens more, including Williams, were injured. The Deepwater Horizon was ablaze in the middle of the Gulf, and would soon tip over and sink into the depths, leaving an open wellhead with oil gushing into the tropical waters.

The BP and Transocean drillers on the Deepwater Horizon were all working for one of the most powerful men in BP. Andy Inglis had been the right-hand man of CEO Tony Hayward since 2004. When Hayward got the top job, following the ouster of the legendary John Browne in 2007, Inglis took over the exploration and production (E&P) unit, an elite group at BP that accounted for most of the company's profits and that was used to getting its own way.

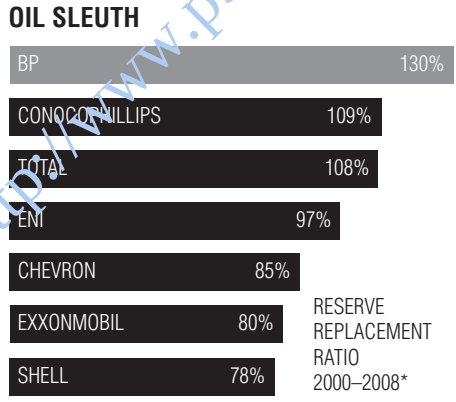
During the reign of Inglis, E&P's stature grew even more, and so did the importance of the Gulf of Mexico. He moved his unit's headquarters to Houston, away from the meddling bureaucrats in London. Even though it was located across the ocean, it was clear that E&P was the heart and soul of BP. The company's most recent annual report was emblazoned with the title: "Operating at the Energy Frontiers."

In the three years since Hayward took the top job at BP, Inglis had been used to reporting a string of successes to his boss. Now, early in the morning of April 21, he had a very different job. He rang Hayward, who was in the habit of staying at the Haymarket Hotel, a cozy London establishment near BP's offices, on weekdays. Hayward was eating breakfast when Inglis told him there was a blowout in the Gulf and people were missing. Hayward says his first reaction was "unprintable." What he thought he had worked hard to prevent had happened—and his best business unit was responsible.

Only nine months earlier Inglis was at the top of his game. On a steamy July day in 2009, he held court in the cabin of a wood-paneled corporate jet as it took off into the early morning skies from Sugarland Regional Airport, in the Houston suburbs. Inglis was accustomed to having private jets at his disposal. He spent much of his work life visiting BP's far flung empire, and oil chiefs rarely fly commercial. Today, he was taking a guest to BP's showcase development in the Gulf of Mexico, a massive oil production platform called Thunder Horse.

On the short hop to Houma, Louisiana, BP's base for ferrying people and supplies to its growing number of installations in the Gulf of Mexico, Inglis—pronounced "Ingalls"—unfolded a table, flipped

through a bound set of charts and graphics, and gave a simple presentation, a kind of BP 101. The one thing that is crucial for a company like BP is finding new oil and gas to replace what you remove. If you fail in that task, you are eventually out of business—you are dead. Many companies struggle to replace their output; BP does not, Inglis said. It has been consistently adding more oil to its reserves than it produces, he said. In 2009, the company said it had found more oil than it pumped from the ground for 17 straight years. Inglis gave much of the credit for this performance to a strategy first laid out by former CEO John Browne in the early 1990s. As Inglis explained, BP doesn't waste its energy on small-potatoes projects. Instead, it focuses on finding and being the first to exploit giant fields of a billion barrels or more because these bring the scale and follow-on opportunities that can keep a company in business for a long time and earn it big money.



BP's oil explorers have better success than their competitors in finding new oil to replace the oil that the company produces from its existing wells. This ensures BP has plenty of oil to produce and sell in the future.

Source: Stanley Reed, "BP Rolls the Dice," *BusinessWeek*, September 14, 2009, p. 48. Data: Exane BNP Paribas.

The strategy means working on the frontier, a word that in the oil business has more than one meaning. Sometimes the frontier is an edgy political regime such as in Russia or Iraq, where BP has taken risks to gain a step on its peers. Sometimes it's the boundaries of technology, such as drilling and producing oil in water a mile deep or more. BP has taken the lead in deepwater zones, including the Gulf of Mexico and off Angola. The national oil companies that control much of the world's remaining oil reserves need multinational behemoths such as BP to develop such challenging resources. They don't need them to develop or maintain plain vanilla oil fields, and in those situations they are tempted to squeeze their foreign partners or throw them out entirely. That's why BP, Inglis said, was not interested in low margin, low risk work. "We don't do simple things," Inglis said. "We are prepared to work on the frontier and to manage the risks."

Inglis, a chunky teddy bear of a man with a full head of wavy hair and bright eyes is, by all accounts, reticent, especially with strangers. But when he warms to a subject, he looks you straight in the eye and talks with great enthusiasm in his north of England accent. That was how he was behaving on this day, and why not? Since Hayward became CEO in 2007, making Ingalls the top man in E&P, the pair had done much to right the faltering company after the messy exit of their mentor, the legendary Browne. The multibillion-dollar Thunder Horse platform, for example, had been plagued by years of delays and had even been left listing to one side in 2005 by hurricane Dennis, nearly sinking. Now the giant platform and the two oil fields it drained, Thunder Horse North and South, were performing superbly, producing 250,000 barrels per day of some of BP's most profitable oil and another 50,000 barrels or so of natural gas. Some of the eight existing wells feeding the platform—there would eventually be around 25—were producing a company-best 55,000 barrels per day for BP and its archrival ExxonMobil, which was BP's 25 percent junior partner in Thunder Horse.

Turning things around at Thunder Horse wasn't Inglis's only recent accomplishment. At the end of June 2009, in Baghdad, BP had rolled the dice and snatched the crown jewel of Iraq away from ExxonMobil, the magnificent, if decrepit, Rumaila oil field. BP won what was called a technical service contract with a lowball bid that would bring the company just $2 for each incremental barrel of oil it managed to squeeze out. BP bet it could do so at very low cost. By comparison, the company may make $20 or more on a Gulf of Mexico barrel. BP and its partner, China National Petroleum Corp., agreed to what might be the most ambitious expansion of an oil field of all time: taking the Iraqi field from its present one million barrels per day to almost 3 million barrels at an estimated cost of $20 billion. That feat would make Rumaila the world's most productive field outside of Saudi Arabia.

So daring was the gambit for what could be one of the world's great oil fields that, according to BP's head of exploration, Michael Daly, the Iraq team spent the ensuing weekend agonizing over whether the move was a stroke of genius or a blunder. They hoped their deal would put them in pole position for other Iraq ventures that came up, but they knew that they had only allowed themselves a slim margin, while exposing BP to huge political and security risks. They only began to feel more comfortable when other companies including ExxonMobil later followed suit, offering similarly low fees on lesser Iraqi fields.

Rumaila wasn't a new field. It had actually been discovered by BP in the 1950s. But it had been off limits to international companies for decades, was badly neglected, and represented a potentially huge opportunity because of the tens of billions of barrels of oil that remained underground there. Inglis argued that the project was worthwhile because it would give BP access to large quantities of oil for a very long time. "Long flat barrels" was how he described Rumaila's future contribution to BP's portfolio. More important, it would give

BP an early advantage in what could, along with Saudi Arabia and Russia, be one of the three most important oil- and gas-producing countries in the world. At the time, word around the company was that executives figured that if it went well—a big if—their returns could be in the mid-teens.

• • •

After the obligatory safety briefing at the airstrip, the big helicopter taking the BP party lifted gently off the runway and flew over the bayous and out into the Gulf of Mexico, dodging thunderstorms that looked like gray curtains coming down to the edge of the waves. A kind of oil field history unfolded below as rickety platforms close to shore gave way to more and more sophisticated installations farther out. Finally, after about an hour and a half, Thunder Horse, with its giant red pontoons, came into view.

BP executives liked to bring visitors to Thunder Horse to show off the company's technological prowess and, frankly, its guts. One hundred and fifty miles southeast of New Orleans, this gigantic platform, the size of a sports stadium, was as good a symbol as any of BP's leadership in a region that is the heart of the American oil industry. Thunder Horse floats in 6,000 feet of water, tethered by huge chains that can move the platform around so as to position it for drilling new wells. A two-decades long, multibillion-dollar campaign had paid off for BP in the Gulf of Mexico. In June 2008, Thunder Horse began producing oil, starting with a single well and rapidly building toward its over 300,000 barrel per day plateau. Other big deepwater projects with names like Mad Dog and Atlantis have also come on line in recent years. BP had the most production in the Gulf of any oil company, the most leases for drilling, and what looked like the best future. Part of that future lay beneath the blue waters to the West, where Inglis knew there was a trove of oil even more promising than Thunder Horse.

But Thunder Horse was the bird in the hand now. A Cambridge-educated mechanical engineer, Inglis revels in the intricacies of the equipment and likes to get his hands dirty. Thunder Horse was a special treat for him since many of the components had to be custom-designed. This was because of the presence of corrosive hydrogen sulfide and fluids from the well that were being produced at extraordinary pressures—17,400 pounds per square inch—and at hellish temperatures—275 degrees.

Further, since much of the oil-producing infrastructure lies on the sea bottom under tremendous pressure that would crush any person who tried to descend there, everything from the arrays of valves called Christmas trees that sit on top of the well heads, to the steel pipes that rise up more than a mile through the turbulent loop currents to bring the oil from seafloor to platform, are custom-built. For an engineer like Inglis it was a dream-come-true, and he expected people to be suitably impressed. "Isn't this amazing?" he said over and over.

While Inglis climbed catwalks and descended deep into the depths of Thunder Horse's floats, his ears stuffed with foam plugs to ward off the whine of machinery, the Deepwater Horizon was about 300 miles off to the west boring the deepest oil well ever into the floor of the Gulf. The find, called Tiber, would be announced two months later, and it was the biggest find yet in the deep water of the Gulf. While the oil would not be easy to recover, BP executives were excited about it. They said it was of relatively light consistency, making it easier to extract and likely to produce a lot of gasoline, and they expected the field to have a long life.

That July there was a palpable sense of pride and esprit de corps around BP and its nerve center in an office park just off the Katy Freeway, West of Houston. The cooks on the Thunder Horse platform presented their visitors from England with rich, baked scones to make them feel at home. Even a severe thunderstorm, that forced the helicopter returning from Thunder Horse to circle round and round above the swamps surrounding Houma, didn't dampen Inglis's spirits.

The Gulf of Mexico was proving to be an even greater success for BP than just about anyone expected. The region was so important to the future of the company that Inglis settled in Houston with his wife Bobbye, an American, and their five children. In the 1990s, while working in Alaska, another BP stronghold, he had tragically lost his first wife in childbirth. Though he roamed the globe during the week and was often in London, he made Houston the headquarters of his Exploration and Production division, supplanting Sunbury, a drab London suburb. A crack golfer, who grew up near the famous Royal Lytham and St Annes course in northern England, host to the 2012 Open, Inglis was widely touted as Hayward's likely successor. And he was sought after for other prestigious jobs including the CEO slot at BAE Systems, the giant British defense contractor.

Heady stuff. But on the night of April 20, 2010, things would go sour for Inglis, for Hayward, and BP.

• • •

Within an hour of the explosion, Williams, Bertone, and Brown, along with 112 of their mates, were aboard a service ship, the Damon Bankston. Many were being treated in the Bankston's hospital ward, and the more seriously injured were being airlifted by the Coast Guard to hospitals on shore. Many of the people remained on the supply vessel for 36 hours as the seamen tried to find the 11 crewmembers who remained missing, and Coast Guard officials took statements of the survivors.

However, the rescue was far from the end of the disaster. Oil flowed from the Macondo well into the waters off Louisiana for 87 days, soiling that state's shrimping and fishing grounds, as well as its delicate marshlands. Oil would wash ashore on the beaches of Mississippi, and some would reach as far as Texas and Florida. For three months, BP's engineers, the same people who could find oil where few else on earth

could and extract it from places no one else dared, couldn't manage to plug the hole they drilled in the Macondo prospect. When something went wrong they were mystified. As the oil gushed, the anger of the American public swelled to a howl, one that demanded action. And action was taken.

Every member of Congress who could remotely claim jurisdiction launched an investigation. On some days in summer 2010, there were three separate oil spill hearings in a single day on Capitol Hill. BP executives were summoned to Washington over and over to answer the questions and absorb the anger of Senators and Congressmen. President Barack Obama went looking for some ass to kick, as he famously said on June 6, 47 days into the spill. He found it at the door of BP, where he demanded a lump sum of $20 billion to compensate those whose lives had been ruined or damaged by the explosion and subsequent oil spill.

It was less than a year between Inglis's triumphant tour of Thunder Horse and the early morning of April 21, when he picked up the phone to dial Tony Hayward and tell him there was trouble in the Gulf.

The explosion, the fire, and that phone call marked the beginning of the end for both men. Hayward would be forced out just over four months later after his consistently horrendous performance as a public spokesman. Inglis, who became invisible to the outside world after the explosion, saw his post eliminated two months after that.

And it was a devastating blow for BP, the company that made its name pushing the bounds of the possible, deep under the waters of the Gulf. For BP, the Macondo blowout was yet another turning point. While it may not lead to the company's demise, it marks the end of its brief period of industry leadership and the beginning of a spell of downsizing and eating humble pie. The tragedy of the Deepwater Horizon, however, was not simply a horrible accident. It was a disaster that many say was long in the making, was foreseeable, and almost inevitable.

Only 15 years earlier, BP was a middleweight, mid-sized oil company, heavily bureaucratic, and known more for its long history and ties to the British government than for doing groundbreaking work.

In 1995, John Browne, an ambitious Cambridge University graduate, with a Stanford MBA who had spent his entire career with the company, took over as CEO. Through his BP 101 strategy of going after only huge new finds, combined with aggressive acquisitions, BP became the largest producer of oil and gas in the United States, with over 1 million barrels per day. A major reason for this success was its lead in the relentless march into deeper and deeper water. The oil found and produced far out in the Gulf became a huge growth area for the U.S. industry, which was now increasing production after two decades of decline. All of the deepwater activity in the Gulf just beyond its doorstep, enabled Houston to retain its primacy as the world's premier oil hub, even becoming a kind of Silicon Valley for the oil industry.

Browne also launched an initiative to rebrand BP as a green company, one that was "Beyond Petroleum" and an innovator in alternative energy. Under the glamorous and dynamic Browne, BP became the Goldman Sachs of the oil industry. It was elitist, innovative, and hard-charging.

That aggressive expansion and technological prowess, however, gave the leadership of BP a swagger that led them to believe they were better than others, industry officials say. The company had a long track record of industrial accidents in the United States and around the world, and had been under investigation by federal agencies including the EPA, the FBI, and OSHA for years. Initial investigations into the causes of the Deepwater Horizon explosion revealed a string of questionable decisions by BP officials and their Transocean Inc. subcontractors, as well as what appeared to be lax maintenance on crucial equipment and shortcuts to save time and money.

By the time it plugged the hole at the bottom of the Gulf, BP had become the biggest oil polluter in U.S. history, dwarfing the notorious Exxon Valdez, the oil tanker whose drunken captain ran his ship aground in Prince William Sound off Alaska, dumping its entire payload into the sea.

BP also had the poor luck of falling on its face in the worst possible place at a bad time. Pilloried in the U.S. press, BP found itself facing the fury of an inexperienced president and the scorn of its own industry. In very little time, the most daring and successful oil explorers on earth, who had managed to once be the envy of their peers, the toast of investors, and the darlings of some environmentalists, had become the most hated company in the Western world.