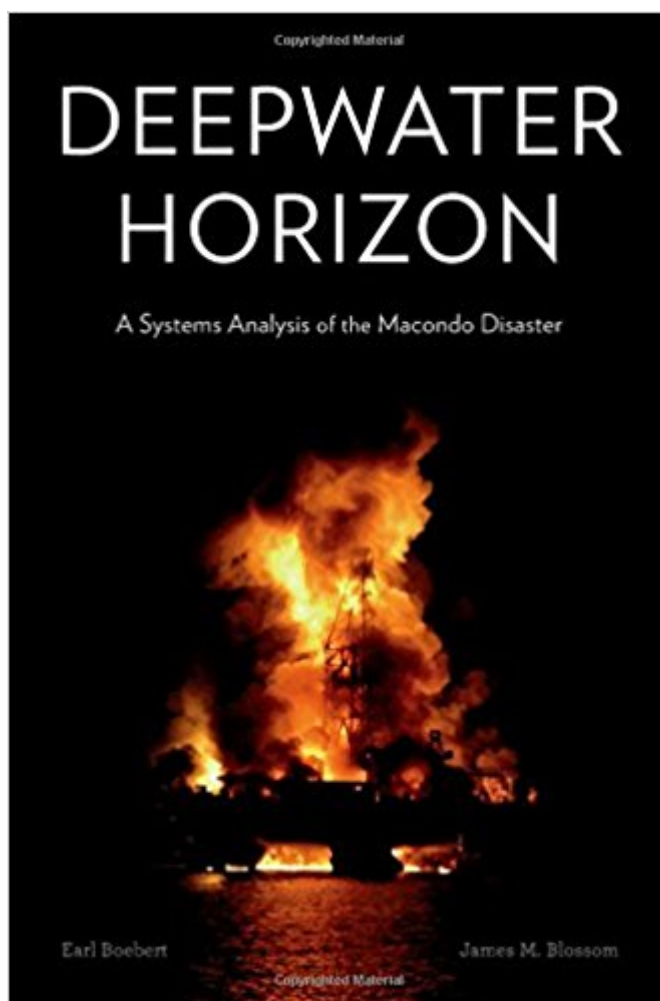The book was found

Deepwater Horizon: A Systems Analysis Of The Macondo Disaster

Synopsis

On April 20, 2010, the crew of the floating drill rig Deepwater Horizon lost control of the Macondo oil well forty miles offshore in the Gulf of Mexico. Escaping gas and oil ignited, destroying the rig, killing eleven crew members, and injuring dozens more. The emergency spiraled into the worst human-made economic and ecological disaster in Gulf Coast history.Senior systems engineers Earl Boebert and James Blossom offer the most comprehensive account to date of BPÃ¢â ¬â„¢s Deepwater Horizon oil spill. Sifting through a mountain of evidence generated by the largest civil trial in U.S. history, the authors challenge the commonly accepted explanation that the crew, operating under pressure to cut costs, made mistakes that were compounded by the failure of a key safety device. This explanation arose from legal, political, and public relations maneuvering over the billions of dollars in damages that were ultimately paid to compensate individuals and local businesses and repair the environment. But as this book makes clear, the blowout emerged from corporate and engineering decisions which, while individually innocuous, combined to create the disaster.Rather than focusing on blame, Boebert and Blossom use the complex interactions of technology, people, and procedures involved in the high-consequence enterprise of offshore drilling to illustrate a systems approach which contributes to a better understanding of how similar disasters emerge and how they can be prevented.

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Customer Reviews

This book offers an extremely methodical approach to the BP Deepwater Horizon oil spill. It is written in a concise, no-nonsense style, and couched in terms that a layman can understand. It is a highly original work with a well-structured argument, providing insight into the BP oil spill unavailable elsewhere. A thoroughly recommended read not only for oilfield professionals, but for all concerned parties. (Alastair R. Fleck, Shell Global Solutions)Deepwater Horizon: A Systems Analysis of the Macondo Disaster shines a spotlight on the very high-risk situations that demand a consistent systems approach at all levels and from all parties. It demonstrates thatÃ¢ ¬â ¢however popular or trendy they are todayÃ¢ ¬â ¢streamlined, agile approaches donÃ¢ ¬â„¢t work in all situations. This book will be of value to business and engineering audiences, as well as anyone interested in technology policy. (Marjory S. Blumenthal, technology policy expert)Deepwater Horizon is the definitive work on an event that not only had enormous ecological repercussions, but which also shook the oil industry to its foundations. Meticulously researched, the explanation of the disaster will be comprehensible to the interested layman, while numerous annotations add depth and detail for academics and professionals. The authorsÃ¢ ¬â„¢ purpose is to analyze the event, detail the lessons learned, and thereby make everyone safer. The book fulfills the first two aims admirably, and the rest is up to us. (Andrew Kay, independent oilfield consultant)Modern organization theory emphasizes the central role that organizational culture and structure play in outcomes, and though this book is not on organization theory per se, it is destined to be a classic case study in the field. A great deal of safety analysis focuses on searches for the root cause of accidents and disasters, but the Deepwater Horizon incident demonstrates that the causality of some disasters has a fundamentally multifactor nature. This book should be read by anyone concerned with safety of large complex systems. (Herb Lin, Stanford University)Readers wanting to know just what happened and why in the Deepwater Horizon disaster will never find a better book. (Steve Donoghue Open Letters Monthly 2016-09-13)Two senior systems engineers offer a comprehensive account of BPÃ¢ ¬â„¢s Deepwater Horizon oil spill, where escaping gas and oil destroyed the rig, killing 11, injuring dozens and creating the worst human-made ecological disaster ever in the Gulf of Mexico. The book sifts through the evidence, challenging the common explanation that the crew, under pressure to cut costs, made mistakes compounded by a safety device failure. Instead, individually innocuous corporate and engineering decisions combined to create the disaster. The complex interactions of technology, people and procedures involved in offshore drilling illustrate a systems approach that yields a better understanding of how to prevent similar disasters in the future. (ISE Magazine 2016-12-01)Most accounts of the Deepwater Horizon disaster dwell on the drama of the rigÃ¢ ¬â„¢s last hours, as the crew struggled to cope with the well blowout and then

fought to survive. Those events are also part of Boebert and Blossom's story, but the scope of their narrative is broader. Much of the action takes place deep underground, where drilling technology meets the uncertainties of geology, or else miles away in BP's Houston offices. Their approach is analytic rather than dramatic. Theirs is the account for readers who want to understand how such disasters come about and what strategies might have the best chance of preventing more of them. (Brian Hayes American Scientist 2017-05-01)

Earl Boebert is a retired Senior Scientist at the Sandia National Laboratories.James M. Blossom gained his engineering experience at Los Alamos National Laboratory and the General Electric Corporation.Peter G. Neumann is Principal Scientist in the Computer Science Laboratory at SRI International.

Confronted with the snarl of conflicting, contradictory and missing information that is the Deepwater Horizon, Boebert and Blossom wade in with sieves and scales, and after much sorting and weighing, make as much sense of it as anyone is ever likely to.As you read Deepwater Horizon, many accounts written as the disaster was unfolding or in its immediate aftermath suddenly snap into focus, their implications finally clear. 'My God,' you find yourself saying again and again, 'so that is what that was all about.'Boebert and Blossom lay out their terms in an introductory chapter. They are going to discuss the Deepwater Horizon as a "system," they say, a system so complex that no one individual or entity truly understood it. They will not be looking for a root cause of the disaster. Rather, they say, the blowout was a result of a combination of decisions, actions and component attributes rather than the result of a single act or failure.Moreover, they are going to be taking a "scholarly" rather than a "judicial" approach to the evidence, since their goal is to understand, rather than to place blame. For this reason, none of the actors is named, even when they are as easily identifiable as the chief executive of British Petroleum at the time of the disaster.Remarkably--given these and other narrative (or anti-narrative) decisions--Deepwater Horizon is an engaging and ultimately gripping read, at first illuminating and then impossible to put it down, even if you do have to go to work the next day.To me one of the most fascinating elements of this story is how little information the crew on the rig actually had about what was happening more than a mile beneath them at the bottom of a hole in the ocean floor. The authors explain that, as far as physics is concerned, the well is essentially a big U-shaped tube stuffed with heavy drilling mud to prevent lighter hydrocarbons from rising to the surface prematurely. The crew monitored the hidden state of the well by comparing the amount of mud they were pushing down to the amount coming back

up.So mud is the ground truth, the ultimate finger on the pulse of the well. But during the procedure that led to the blowout--a crucial test of the integrity of the cement seal at the bottom of the well--the mud loggers couldn't, or thought they couldn't, monitor the volume of mud in the storage pits because other crew members were moving the mud from storage pit to pit before transferring it overboard.What's worse, nobody did the predictive well-control calculations that would have showed the procedure they were undertaking would bring the well close to the edge; the point where the push of the mud would be unable to oppose the shove of the hydrocarbons. Nobody, in other words, was saying I'm not going to do something I don't understand, and everyone was just following orders in the belief that someone else understood.Boebert and Blossom are right to insist are no heroes and no villains in this tragedy. Nobody quit his job to prevent the disaster but nobody acted maliciously either. But everyone who has ever worked in a large organization will recognize two 'types' in the story: those who know what they are doing and those who don't.The person you hope is sitting next to you is a senior guy with a lot of experience, "the ability to draw conclusions from incomplete and conflicting information" and "the moral fiber to act." A few of them turn up in Deepwater Horizon, asking inconvenient questions and refusing to proceed until conditions are met (we've all been in that meeting, silently cheering them on). But the system rolls over them: They are bypassed, or don't have the authority, or are given the day off.In any case they are vastly outnumbered by the other guys, the ones who don't care or don't care enough, who are just doing a job, just trying to get by. There's the vendor's rep who was known for 'just in time delivery' of test results, thereby depriving other people of the time to think them through; or the guy who created a design document consisting of lots of canned output by pushing the "generate report" button on the computer. We've all worked with people like this. silently fixed the broken things they leave in their wakes and fervently hoped never to work with them again.What matters in the end, however, what saves the reader and comforts her, despite her smoldering anger at the stupidity of it all, is the narrative voice: the calm, thorough, persistent, intelligent voice of the authors and their unstated code of respect for competence, for intellectual honesty, and for taking responsibility.To some extent what happened on the Deepwater Horizon was technology specific. For a science writer like me, one of the pleasures of this book is clarity of the descriptions of deep-water drilling technology, the many technical illustrations, and the appendices on topics such as cementing mechanisms or low returns during displacement. It's not really possible to understand what happened without getting into the details.On the other hand, the Deepwater Horizon is also a type, or exemplar, of the many sporadically lethal "systems" that are part of our lives today-- such as the U.S. heath-care system, the Internet, the U.S. government, and the global climate system--all of which we seem

hell-bent on running close to the edge.We would all be better off is more of us thought, when we were under pressure to go forward assuming the best, that one day someone might write a book like this one about what we were doing.

The authors of this book do a fine job of explaining exactly what went wrong with the Deepwater Horizon. It's easy to read and understand, and I found it to be fascinating. They apply a thorough, rigorous approach to analysing every single factor that led to the Macondo well blowout and subsequent destruction of the Deepwater Horizon rig. As with most things on life, things were not as simple as they seemed, and the causes of the accident were numerous. I thought the authors did a really fantastic job and the book was worth the high price. I read it on the Kindle and the diagrams were easily readable.

Accidents in complex systems often have root causes that stem from organizational or even cultural problems. This analysis of the Deepwater Horizon disaster steps back to examine the context for this "emergent event". The details of rig operations and onboard decision-making ring true from my limited experiences, but more importantly, the generalities of disorganization, miscommunication, and human psychology are applicable to systems far beyond the oil industry.

Best technical Explanation of what went on, & excellent description of oil well construction that I have found.I would recommend this book to all who want to gain a Knowledge of oil wells, & deep Ocean exploration.This is an all in one book.Louie

Not an entertaining book. It read like a documentary. Mom

I'm used to reading science fiction and fantasy, so this book is reading more like a text book, at least to me. I know the author is the reason for the purchase. It is interesting reading, some of the facts mentioned, I don't recall being mentioned by the news during the actual event.

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