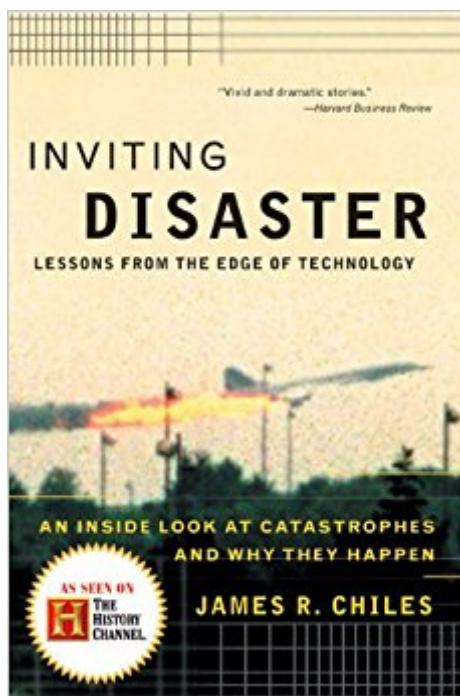


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# Inviting Disaster: Lessons From The Edge Of Technology



## **Synopsis**

Combining captivating storytelling with eye-opening findings, *Inviting Disaster* delves inside some of history's worst catastrophes in order to show how increasingly "smart" systems leave us wide open to human tragedy. Weaving a dramatic narrative that explains how breakdowns in these systems result in such disasters as the chain reaction crash of the Air France Concorde to the meltdown at the Chernobyl Nuclear Power Station, Chiles vividly demonstrates how the battle between man and machine may be escalating beyond manageable limits -- and why we all have a stake in its outcome. Included in this edition is a special introduction providing a behind-the-scenes look at the World Trade Center catastrophe. Combining firsthand accounts of employees' escapes with an in-depth look at the structural reasons behind the towers' collapse, Chiles addresses the question, Were the towers "two tall heroes" or structures with a fatal flaw?

## **Book Information**

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## **Customer Reviews**

*Inviting Disaster*, by technology and history writer James R. Chiles, is an unusual book: it appeals to the macabre desires that keep us riveted to highway accidents, while knowledgeably discoursing on the often preventable mistakes that caused them. At its heart are colorful stories behind more than 50 of the most infamous catastrophes that periodically chilled the advance of the industrial age. There are both those well remembered (the 1986 Challenger explosion, for example) and those now largely forgotten (a 1937 gas explosion at a Texas school that killed 298). But along with lively depictions of these deadly devastations and white-knuckle calamities--the U.S. battleship Maine,

Apollo 13, and Three Mile Island among them--Chiles offers an informed analysis of the unfortunate chain of events that brought them about. And by grouping like incidents to show how fatal "system fractures" eventually developed through a combination of human error and mechanical malfunction, he also suggests how we might sidestep such tragedies in the future. In so, doing he fashions these spectacular accounts of failed planes, trains, ships, bridges, dams, factories, and other conveyances and facilities into a cautionary tale about technological progress. --Howard Rothman

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Despite the specter of the Titanic, the oil rig Ocean Ranger was called "unsinkable" until one fateful night in the North Atlantic in 1982. Failing to anticipate that the vessel could list significantly to one side, its builders left open some five-foot-long holes on top of its corner supports, which filled with water during a terrible storm and led to the deaths of all 84 crew members. Chiles treats readers to a laundry list of such disasters from Bhopal to Chernobyl that arose from mistakes, panic or hubris. The result is a parade of dramatic stories about people who are simply unable to think in critical situations: "imagine having to take the most difficult final exam of your life while somebody is lobbing tear-gas grenades at you... when you are also suffering a major migraine headache and violent food poisoning." In some cases, he suggests proactive measures (e.g., when on a plane, note the number the rows to the exit, in case there's a snafu involving blinding smoke). In a book that is much more than a litany of disaster and tips on survival, Chiles also offers fascinating, detailed analyses of "system fractures" chains of events yielding catastrophes. Despite the depressing subject matter, the book is ultimately hopeful, recounting numerous acts of foresight or bravery in the face of bureaucratic opposition that saved many lives. (Aug. 31) Copyright 2001 Reed Business Information, Inc. --This text refers to an out of print or unavailable edition of this title.

Chiles presents an inside view in chilling detail on technological disasters and the chain of events immediately preceding them. Even more compelling is not the technical details presented of said disasters, instead the fascinating study of the psychological phenomena as the human mind comes up against an uncompromising set of events that lead to technological catastrophes. As humans we are definitely at the mercy of misinformation, especially when we live in world where we are regularly put in charge of systems that we have no intimate knowledge of. Chiles presents conclusive and detailed evidence on how our natural tendency to over-estimate our abilities (the Dunning Kruger Effect - Page 131) causes many of us to fail, including groups of us acting in unison. The most interesting stories in this book are not the ones that offer in depth analysis on the

actual catastrophes, but instead, the untold stories of those of us who refused to yield to uncertainty and mediocrity, such as the highly touted US Navy Commander Hyman G. Rickover, who fortunately for us was in charge of the US Navy Nuclear Powered Submarine Programs. There are other examples, such as captain Bryce McCormick who foresaw the obvious possibility of complete failure in the DC-10 design in 1970, only to experience it first hand in 1972. His heroic actions are unparalleled today, and there is no doubt McCormick as well as our modern day aviation hero "Cap'n Sully" are in a group of a few elite individuals singled out in history, that through sheer intuition, logic, and self-discipline were able to overcome seemingly impossible situations. They all seemed to have had a deep and clear mental understanding of not only the machine itself but were also able to receive accurate information on the actual operating state of the machine in which they were in control during the crises, allowing them to formulate a plan ("satisficing") that saved countless lives. Other highly interesting topics discussed in the book: the phenomenon of "Vu Jade" (Page 56), "Satisficing" (page 61), "Normalization of Deviance" (page 67), and finally "Workplace Heuristics" (page 135). The topics presented especially on Heuristics come frighteningly close to the research of Bruce Schneier on terrorism and "Security Theatre". "Watching out for signs of known problems is good, but as systems get bigger and more complex we have to remember that our Achilles has many heels, so to speak. Some of the problems that arise will never have come up before, so the simple hindsight of heuristics can't save us." -- James R. Chiles

I've read this book multiple times. I have some minor quibbles with some of the story structures and I think a better editor could have tightened it up, but overall, this is a really great read if you are interested in the whys and hows of catastrophic events. The lessons learned and discussions of testing and team communication really can be applied not just to high stakes or dangerous jobs, but many day to day work processes in construction, IT, banking; any job where changes are installed that impact customers or processes used by people on a regular basis. It can almost make you anxious to consider times in your job where maybe a more robust testing process could have benefited the product and reduced risk.

I bought this book as an additional resource for an MBA Course on Organizational Theory but actually enjoyed the read! Chernobyl, Three Mile Island, Challenger, 9/11, and other well-known cases of systematic failure are documented in this book. Using twenty years of experience James R. Chiles chronicles the systematic breakdown of these disasters rather than sudden failures. Using chronological evidence gathered he is able to show the systematic breakdown of events leading up

to the failure we all know as a sudden occurrence. Who knew that so many things had to go wrong in order for some failures to occur? This book is not a comprehensive chronology of these events but rather a brief overview of each. The author bounces back and forth between several similar stories within a chapter (often spanning over a century between stories) and can get confusing at times, but a careful re-read of the page and you'll understand the connection he's making. Inviting Disaster is a great starting point to understanding systematic failures, and is a great launching point for additional research.

This is an interesting book consisting of a large number of engineering disasters and near misses. Each is treated with a brief investigative story explaining what happened and generally why. Most of the disasters are very large, such as the Piper Alpha and Bhopal and thus are the most dramatic and hard hitting. The Concorde on the cover is not a prominently examined example however, which was slightly disappointing to me being an aerospace engineer. For the lay reader this is an elucidating set of stories that many will find intriguing. For the practicing engineer it is more a reminder of the importance of safety, considering failure paths, incorporating safety systems, designing within the constraints of human capability squarely in mind, etc. However it really is a book from a pop-interest TV show. Although subtitled "Lessons from the Edge of Technology" the lessons are the simplest kind that would be discovered on a 1 hour TV episode with commercials, such as after the Piper-Alpha incident revealing: sea water and electronics don't mix. It's not a good theoretical or reference source for learning about safety in engineering design, but is a good motivator for learning why it is important for engineers and regulators to know and implement such things.

A video documentary on Three Mile Island led me to this author. I bought the book and could not put it down. I have worked in the defense industry for 20 years and I have witnessed first hand the blunders, miscalculations, and poor management decisions that could have, and sometimes did, lead to catastrophic failures. I have been the careless factory worker myself and worked for those who encouraged this mentality. I wish everyone involved in complex industries and projects would read this. I also enjoyed the balance of perspective and the readability to the average person. This will be one of my favorites, and I will read anything else by James Childs.

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