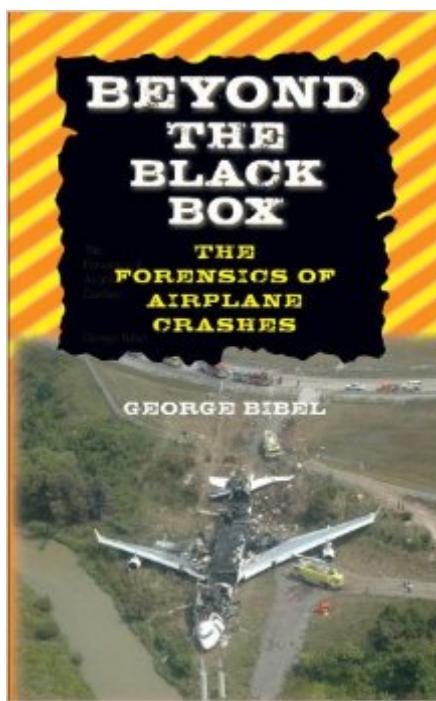


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# Beyond The Black Box



## **Synopsis**

The black box is orange -- and there are actually two of them. They house the cockpit voice recorder and the flight data recorder, instruments vital to airplane crash analyses. But accident investigators cannot rely on the black boxes alone. Beginning with the 1931 Fokker F-10A crash that killed legendary football coach Knute Rockne, this fascinating book provides a behind-the-scenes look at plane wreck investigations. Professor George Bibel shows how forensic experts, scientists, and engineers analyze factors like impact, debris, loading, fire patterns, metallurgy, fracture, crash testing, and human tolerances to determine why planes fall from the sky -- and how the information gleaned from accident reconstruction is incorporated into aircraft design and operation to keep commercial aviation as safe as possible.

## **Book Information**

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## **Customer Reviews**

As an airline pilot and safety researcher, I ordered "Beyond the Black Box" as soon as it became available. This book is different from most books about aircraft accidents in that it focuses on the actual dynamics and mechanical processes of aircraft accidents rather than Human Factors: I found Dr. Bibel's book to be illuminating from a physical sciences viewpoint. The book uses very basic

science and math principles (as well as simple experiments suitable for home or classroom use) to explain important points about these accidents. Some of these accidents are quite well known, even outside of the industry (United 232), while most have been forgotten by everyone other than those directly involved in aviation safety and engineering (the Comet decompression accidents, the British Midland 737 accident at Kegworth, England, etc.), but all are excellent examples of different accident modes. I have studied numerous accidents over the years, and have taught several aviation safety courses, and I think this book is the best introduction to the physical sciences and engineering involved in aviation accidents available to the public. It is written with both expert professional and interested observer in mind, and is easily comprehended; all math and science concepts are thoroughly explained, as are higher order concepts like metal fatigue and fracture analysis. I recently had the privilege of meeting Dr. Bibel and hearing him speak on aircraft accidents. He was very gracious and approachable, and I enjoyed both his presentation and his book greatly. This book is not written from a pilot's perspective, and as such contains some generalizations about flying procedures and techniques, but as an accessible scientific introduction to the science and dynamics of airplane accidents, this is an enjoyable and engaging book, and I recommend it without reservation.

I heartily recommend this book. Bibel gives lots of stories of airline crashes and disasters—a surprising number with reasonably happy endings. The stories themselves are fascinating and should be required reading for all pilots and flight attendants. But everyone should appreciate the stories and the care that the entire air industry puts into air safety—and much of the physics and engineering behind it. Very enjoyable read.

(by this person's daughter) I was having a quarter life crisis (25 years old) when I had an epiphany one day. I always been fascinated by plane crashes, I had seen all the Air Crash Investigation (and Mayday) clips on plane incidents on YouTube. I decided I needed to go back to school...and train to become an air plane mechanic (an AP). If you can't read this book and enjoy it....then becoming a mechanic is not up your alley. But if you find the subject matter fascinating, and you end up going through 4 pens jotting notes, then perhaps becoming a mechanic is what you are destined for. This includes trying to talk to co-workers about how a 737 hull can fail, and still land safely, like what happened to Southwest April 2011, and trying to compare this incident to Aloha 243 on April 28, 1988. Then comparing these two planes to the British Comet plane crashes. Now keep in mind one person who gave this book 4 stars, obviously works (ed) for the NTSB or FAA did criticize the

authors description of how TWA Flight 800 came apart, but went on to say he thought that the author did and overall good job. The book even covers a brief, but exciting chapter on the perfection and testing of the ejection seat (and the passenger seat in commercial flight), the man who volunteered to be a human test dummy, and Murphy's law. You will never look at a plane in the sky the same way again, complain on how uncomfortable the seats are in coach, or think about ones career possibility's in the aviation world.

As a pilot who has studied major air crash investigations over the years, this was a great read, with detailed information around the physics of aircraft accidents, backed by interesting statistics around various aspects of air safety today. However one aspect of the book that troubled me is Georges comments around TWA-800, specifically how he states that after the nose of the aircraft was blown off after the initial Centre Wing Tank (CWT) explosion, that the aircraft managed to fly on for a further 40 seconds before stalling. I am astounded that someone with so much aeronautical experience could make such a ridiculous statement, considering the physics involved. With the nose blown off, the CoG (Centre of Gravity) would have immediately shifted aft causing the aircraft to violently pitch up and stall within seconds. To say the aircraft merely flew on straight & level, or even climbed as per the preposterous video released (and subsequently withdrawn) by the CIA, is in my opinion disappointing considering Professor Bibel's extensive experience in this area. With the exception of this particular comment, I found the book to be a very interesting read, with several case studies followed up with good diagrams, graphs and other illustrations complementing the text. It's a book that I highly recommend to anyone interested in understanding aircraft crashes in further detail to what's currently shown on recent TV documentaries of the same subject.

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