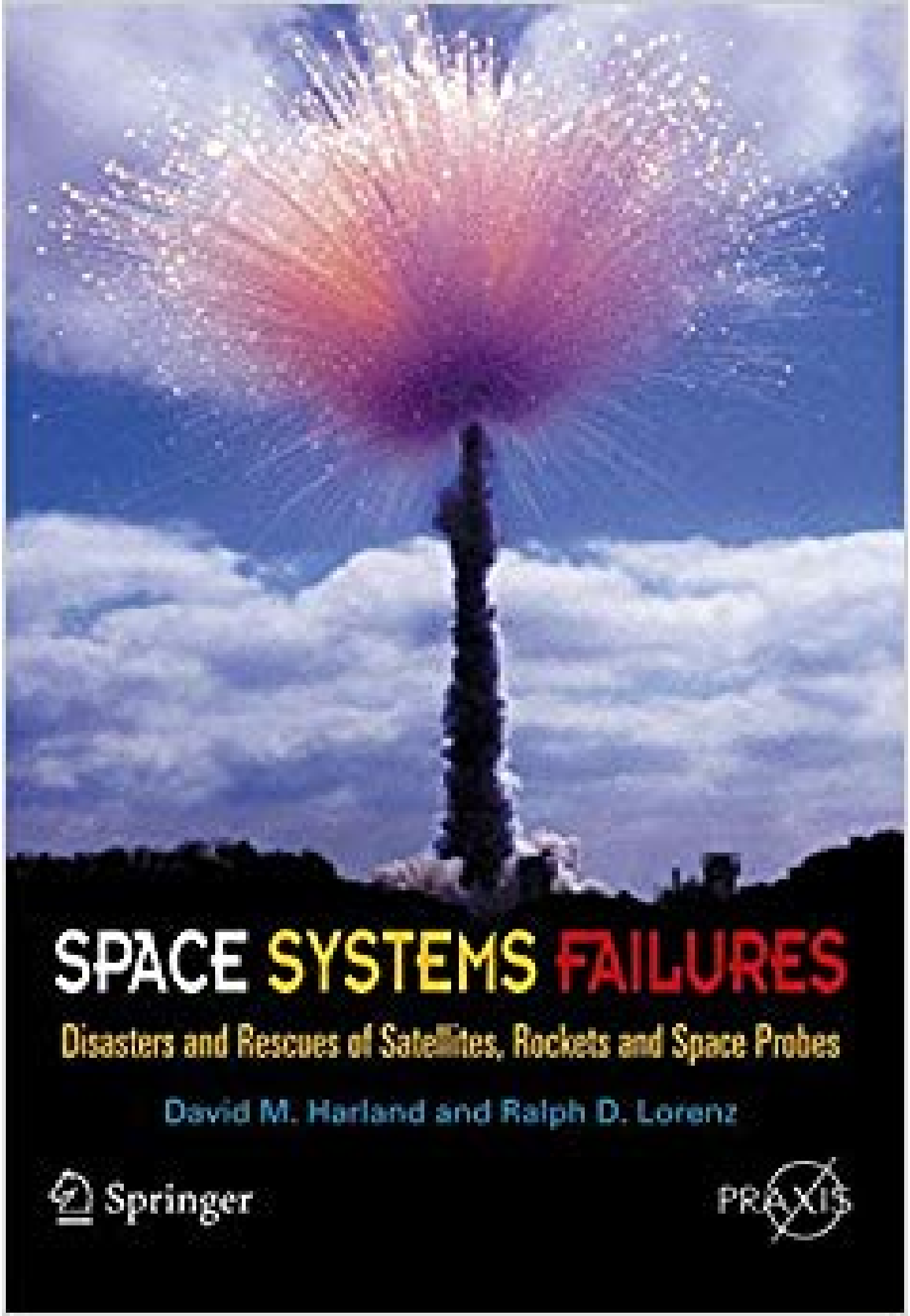

SPACE SYSTEMS FAILURES

Disasters and Rescues of Satellites, Rockets and Space Probes

David M. Harland and Ralph D. Lorenz

Springer

PRAXIS

David M. Harland

Space Systems Failures: Disasters and Rescues of Satellites, Rocket and Space Probes (Springer Praxis Books)

The 1st book on space systems failures written from an engineering perspective. Describes engineering areas of the spacecraft, making this a very important complementary reference function to regular engineering texts. Discusses non-fatal anomalies which do not affect the best success of a objective, but which are failures nevertheless. Focuses on the sources of the failures and discusses the way the engineering knowledge base has been enhanced by the lessons discovered.

Encyclopedic . A bit depressing, nonetheless it provides invaluable insight into the science, art and craft of building and launching satellites.They are examples of missions which appeared as if total write-offs being rescued by the abilities and intelligence of engineers using treasures of imagination and ingenuity to rescue a mission, sometimes exceeding the objectives planned originally for the mission. Just A Laundry List This is just a long list of failures, apparently consolidated from aerospace magazines. Keep in mind, those unaware of the past are doomed to repeat it .. Great textbook! And, nearly as interesting to read as chapter after chapter of encyclopedia entries. There is a little try to summarize or pull lessons learned, but they are inadequate. Plus they do have a very extensive assortment of failures - this is not just Apollo 13 and Ariane 5.I was surprised to look for mention (and handful of detail) of some of the relatively minor programs I have been involved with over the last 15 years or so.This is proven by the number of incredibly stupid faults described in the book, from the decimal point misplaced, to the calculations manufactured in imperial units instead of metric, leading sometimes to billion size dollars bills.There isn't very much to do in the event of problems on a launcher aside from doing fault analysis, with corrections to be employed to the next launches. Also an excellent improvement is always to put a success/failures table at the end of every section covering a given launcher. Excellent book about space failures This book examines failures linked to space exploration in general. It is thorough, much more than I anticipated..The book is divided in two quite different parts: launchers and satellites, with a special chapter on repairs undertaken from the space shuttle.The launcher part is organized by launchers types, and includes a extremely good objective of putting things in historical perspective, an excellent point. A Disappointment As many other reviewers have noted, this book switches into great detail to describe failures that occurred in many space missions, failures that involved from catastrophic booster failure to simple blown fuses. That is a wise way to do in this case.If you want to know how failures are analyzed post-mortem, or what procedures and procedures are placed in place to learn from those errors, you will not find it here. This is quite different and much more interesting with complications on satellites or probes..Patrick Haubrechts Geneva Switzerland Great book, you just have to keep its limitations in mind Some reviewers are complaining that this book does not have "enough detail.The real added value of this book may be the description of the incredible ingenuity applied by engineers and operators to solve the problems whenever a satellite fails in orbit, therefore out of physical reach. There are several interesting tidbits that can be extracted from a brisk read-through, however, not much in the form of enlightenment. Nevertheless, the visually spectacular failure of the Conestoga start automobile (certainly in the category of "minor players") wasn't covered, so this can't be reported to be a definitive collection of every launch or spacecraft failure.I regret that some important recap tables (page 157) and some figures are not better printed or be produced more readable. This is actually just a diary of the timeline of failures in the area Age group.Also, I regret the absence of a straightforward tutorial chapter explaining the basics of rocket and satellite event recording and telemetry, the amount and nature of the parameters recorded, the many captors and a basic description of the procedures of post-mortem analysis. This would help appreciate a lot more the reading of the publication. (Hipparcos, Deep Space 1, etc) This makes the reading of this section very interesting, sometimes feeling just like a thriller." However that the title includes a LOT of floor to cover -- there is no shortage of incidents in it. So unless you are considering a "doorstop" book, you have to expect that any given failure will / will get only so very much insurance.I'd recommend you look at this as an encyclopedia of aerospace failures. You can proceed

deeper with some function on-line, but this will give you a lot of material at an overview level. Four Stars Engaging and interesting. Not your average textbook! by which I mean a small amount of information about each of a lot of facts, with very little analysis or insight. Moreover, as some have mentioned, there is only a feeble try to generalize these encounters and draw insightful conclusions about them. That is an easy read, and a very important addition to the collection of any engineer, in any discipline. .Looking at every chapter's bibliography, you can tell that the authors spent considerable time poring more than back concerns of Aviation Week and additional publications, in order that might conserve you some time if you are researching a particular failure. Don't bother with this reserve. The satellite part is arranged by failures types. To be honest, I found most of these to end up being rather boring, and even the even more dramatic were offered in a dry fashion. Lessons learned from former missions are extremely useful. This is the best benefit and shows that in general, human being are easier to adapt to given circumstances and solve problems imposed on them than being able to predict them and act accordingly beforehand. A Must Read This book must be read by everyone in the Space industry, especially those in quality organizations.....