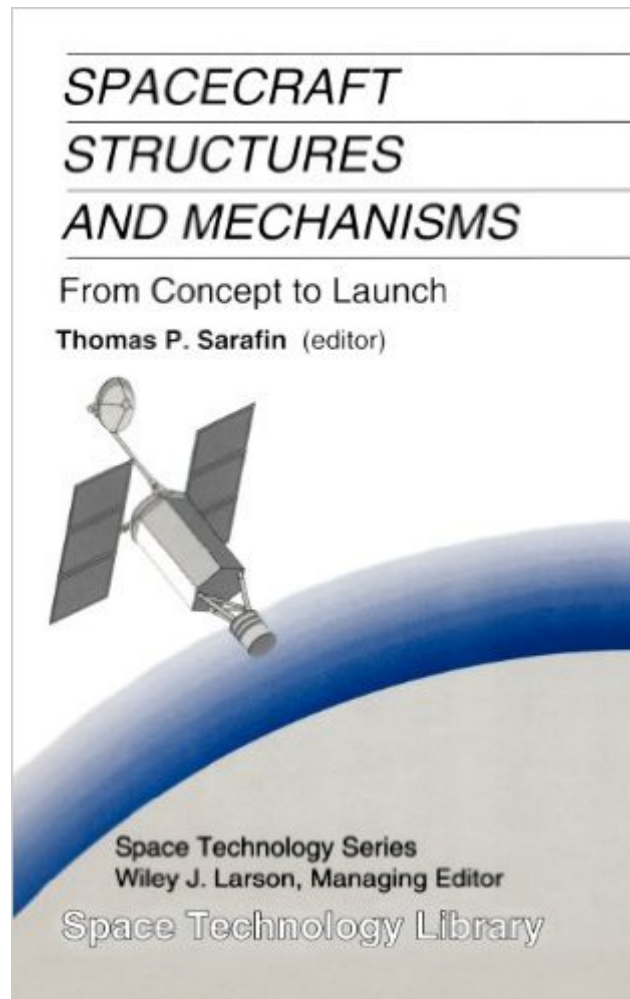


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# Spacecraft Structures And Mechanisms: From Concept To Launch (Space Technology Library)



## Synopsis

Spacecraft Structures and Mechanisms describes the integral process of developing cost-effective, reliable structures and mechanical products for space programs. Processes are defined, methods are described and examples are given. It has been written by 24 engineers in the space industry, who cover the themes of (1) ensuring a successful mission, and (2) reducing total cost through good designs and intelligent risk management. Topics include: Introduction and requirements (development process, requirements documentation, requirements definition, space mission environments); Analysis (statics, dynamics and load analysis, fatigue and fracture mechanics, mechanics of materials, strength analysis, heat transfer and thermal effects); Verification and quality assurance (verification planning, structural, mechanical and environmental testing, quality assurance and configuration control, compliance documentation, structural reliability analysis, verification criteria - factors of safety, margins of safety, fracture control, test options); Design (spacecraft configuration development, finite element analysis, mechanism development, designing for producibility, structural design, materials, designing to control loads, load cycles, sensitivity analysis); Final verification (model correlation, risk management, launch readiness reviews). For system engineers, mechanical designers, stress analysts, dynamics and load analysts, technical leads, program managers.

## Book Information

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## Customer Reviews

This book is a must for anyone involved with spacecraft structures and mechanisms engineering. Well written, with plenty of practical, real world spacecraft information, and a good amount of theoretical/analysis info. I think this is the only book of its kind. Written by real experts in the field, who obviously know what they are doing! Explains design, analysis, testing, and even nails down such things acceptance and qualification testing philosophies. The book is biased towards the structures side as this constitutes 3/4 of the text. Congratulations to all who contributed to this classical book!

Chapter 16 is amazing. James D. Christensen is amazing. He must be a genius. It is the best chapter of the book. Everything in this chapter is presented clearly and concisely. Overall the book is very useful, but Chapter 16 stands head and shoulders above the rest

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