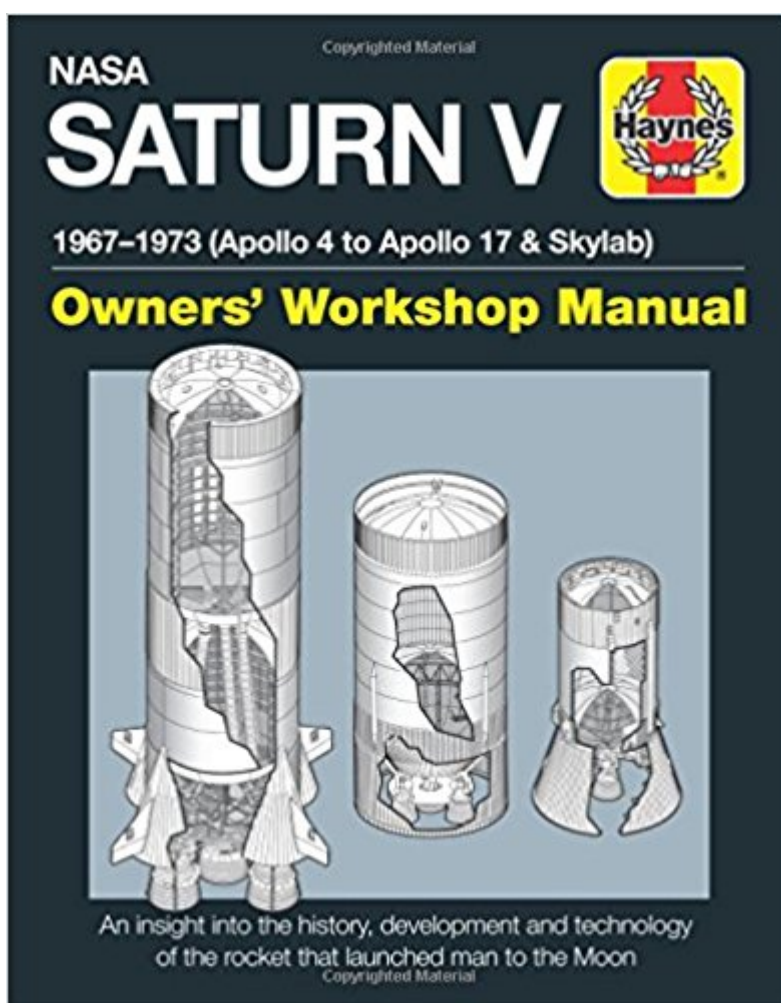


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# NASA Saturn V 1967-1973 (Apollo 4 To Apollo 17 & Skylab) (Owners' Workshop Manual)



## Synopsis

Few launch vehicles are as iconic and distinctive as NASA's behemoth rocket, the Saturn V, and none left such a lasting impression on those who watched it ascend. Developed with the specific brief to send humans to the Moon, it pushed rocketry to new scales. Its greatest triumph is that it achieved its goal repeatedly with an enviable record of mission success. Haynes' Saturn V Manual tells the story of this magnificent and hugely powerful machine. It explains how each of the vehicle's three stages worked; Boeing's S-IC first stage with a power output as great as the UK's peak electricity consumption, North American Aviation's S-II troubled second stage, Douglas's workhorse S-IVB third stage with its instrument unit brain - as much a spacecraft as a rocket. From the decision to build it to the operation of its engines' valves and pumps, this lavishly illustrated and deeply informative book offers a deeper appreciation of the amazing Saturn V.

## Book Information

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## Customer Reviews

David Woods turned his boyhood fascination with Apollo into a lifelong passion. He combined his deep interest with an ability to explain complex technical subjects to the layperson, and has written extensively about Apollo and the technical challenges it presented. David curates the Apollo Flight Journal for NASA, detailing the moment-by-moment reality of flying to the Moon. He is the co-author of both the Haynes Lunar Rover and Gemini Manuals.

After the Saturn V received a measly two pages in 2015's somewhat disappointing Rocket manual, I was hoping it would eventually receive the full-blown Haynes treatment. My wish has finally been answered. This entry in their "Owners' Workshop Manual" is nicely detailed, beautifully illustrated, and yet another excellent work from W David Woods, who is rapidly becoming one of my favorite space historians. Each stage and motor receives its own chapter, as does the Skylab space station. For a technical reference, it's shockingly readable, without dumbing down the subject matter. In essence, this book is a greatly expanded version of the Saturn V sections of Woods' own *How Apollo Flew to the Moon*, combined with the familiar Haynes manual format. This isn't a bad thing per se - if it ain't broke, don't fix it! Despite the novelty format, I really enjoyed reading about many of the more obscure features of this historic launch vehicle. We see how helium was introduced into the LOX pre valves of the S-IC to suppress pogo and prevent vaporization and geysering. We learn how an ingenious oxygen/hydrogen burner was used to re-pressurize the S-IVB's propellant tanks prior to TLI. There are detailed technical descriptions of the F-1 and J-2 motors, accompanied by excellent diagrams and close-up photographs. Even the Instrument Unit receives its own chapter, complete with explanations of how its environmental control system, guidance platform, computer, and Emergency Detection System worked. Visually, this book is a home run. The photographs are numerous, well-chosen, and frequently spectacular. There are images of stages and motors being assembled and tested, close-up views of hardware components, photographs of the Saturn V "in action," and dozens of technical diagrams. Many of the diagrams have been cleaned up, re-annotated, and have had color added to better differentiate components and fluid flows. These diagrams were the highlight for me, going well beyond the basic arrangement of the three stages. We get cross-sections of the F-1 nozzle extension showing how turbine exhaust gas protected the engine bell, a cutaway view showing how hydrogen was routed through the pipework of the J-2's thrust chamber, perspective views of the internal arrangement of the IU, showing the environmental control duct which branched upwards to blow directly on the LM's RTG cask... Seriously, there's a LOT of excellent material here, some of which I wasn't able to glean from the couple times I struggled through "Stages to Saturn." I WANT to give this five stars, but I feel bad giving it only four. Since I can't give it 4 1/2, I'll explain where it falls a little short. First, there's no index. (Boo!) Second, there's not a whole lot about the mechanical connections between the stages, or what the staging process actually entailed. Some additional details would have helped the section on the Skylab S-II interstage immensely. Finally, there are a couple bits where specific details are missing, mostly relating to temperatures, pressures, and the like. A couple of gripes aside, this is one of the best "manuals" Haynes has published in some time, and one of the most enjoyable and readable space

references I've read in a while. It's not perfect (few Haynes titles are), but it's nonetheless an excellent companion to Haynes' other Apollo manuals.

I have been collecting references on the Saturn V for two decades. I have many, many books on my shelf which I use to answer questions from the internet. About half of these are period manuals, published by official NASA contractors back when these vehicles were flying. The others are historical tomes written far after the fact. One thing in common with these references is the lack of proper illustrations. The contractor manuals are always line drawings, sometimes crude, and not very detailed. Most of the more recent historical books are mainly histories describing the people and places where Saturn V development happened. This is fine but the sorts of questions I answer are usually for model builders and space buffs who like to see what they are studying. Mr. Woods' Haynes manual does a fine job of presenting the insides of this famous launch vehicle in a form that allows an understanding of the complexity of the machine. There are plenty of color photos and diagrams which allow the reader to grasp what made the Saturn V go. I now have a reference which allows me to answer questions from one book instead of searching through twenty. Very much recommended.

I was around when they were testing the engines for the Saturn at Edwards AFB in the 60's. Unbelievable power, sound and excitement when that engine lit-off on the test pad. This rocket was and still is one of America's finest accomplishments in the space race. This book helped in explaining how they did that. You have to be a techy type to love some of the details he gives and it seems to cover it all.

excellent book on the Saturn rocket it has a lot of photos and illustration. it cover rockets from the v2 to that Saturn 4.

As with other Owners Workshop Manuals, this one is stellar! Completely detailed and informative into the creation of the worlds most powerful rocket. The details and images on the engines alone make this book worth the price!

Fantastic detail and history. One of these days I'm going to find time to scratch build a Saturn V model, and this book will be a key source. In the meantime, I'm learning bits of the history of the Saturn V I didn't know, and I've read my fair share of books and articles about the Apollo program.

Good addition to my Haynes collection

The best NASA Apollo book ever!

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