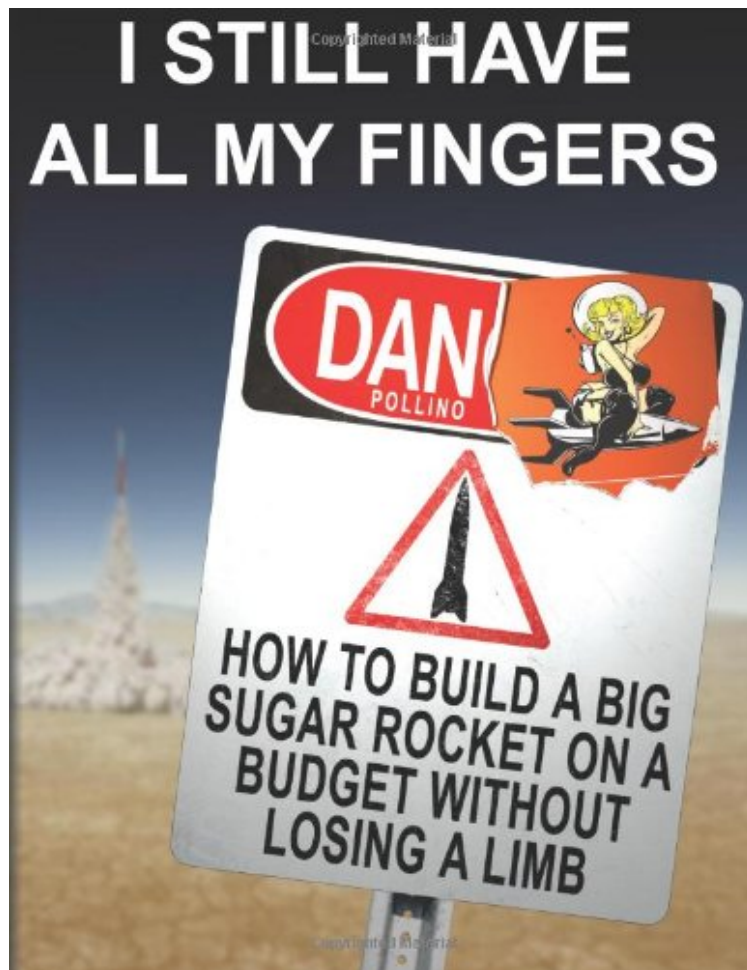


(Ebook pdf) I Still Have All My Fingers: How To Build A Big Sugar Rocket On A Budget Without Losing A Limb

# I Still Have All My Fingers: How To Build A Big Sugar Rocket On A Budget Without Losing A Limb

Dan Pollino

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**Dan Pollino : I Still Have All My Fingers: How To Build A Big Sugar Rocket On A Budget Without Losing A Limb** before purchasing it in order to gage whether or not it would be worth my time, and all praised I Still Have All My Fingers: How To Build A Big Sugar Rocket On A Budget Without Losing A Limb:

8 of 9 people found the following review helpful. New Hobby? :)By UserUPDATED 2/24/2017!-----

INTRODUCTION-----

And so began my journey. May 26, 2015, approximately 10 days after the Spring, 2015 school semester had ended, was when I placed my first parts order. No more idleness. I can feel it eating away at my soul. I'm sick of sitting on my ass EVERY school semester doing NOTHING. NO MORE! So I built a rocket this summer. Maybe I'll build another?

Actually, I DID! I Still Have All My Fingers - How to Build a Big Sugar Rocket on a Budget without Losing a Limb" is an excellent step-by-step guide on how to build a large rocket capable of reaching an altitude of up to 6000 feet! Once fully assembled, this rocket will stand about six feet tall with a width of three inches, and weigh roughly 22 pounds. Although this may sound exciting, you MUST understand the journey you'll undertake, should you accept it. Building this rocket requires a substantial amount of preparation, time, patience, and precision, NOT INCLUDING the more than 100 individual parts needed or the significant variety of tools you'll need to be efficient and precise while building it.

#### PROS

1) Provides a simple and logical step-by-step format that explains, in detail, how to build each component while providing photographs for how each step should look when executed. Also shows pictures each and every part needed for each specific step! 2) I rarely felt lost or confused while following the instructions. It organizes each rocket component in its own chapter; making it easy to flip to a specific chapter to build or reference a specific element of a single component of the rocket. 3) Provides an easy-to-read parts list that's found on "www.inverseengineering.com". The prices shown, however, may be lower than the actual costs when bought from www.mcmastercarr.com and your local hardware store due to inflation.

#### CONS

1) THERE ARE MISTAKES IN THIS BOOK! HOWEVER, ALL OF THEM ARE LISTED ON "WWW.INVERSEENGINEERING.COM". THERE ARE A TOTAL OF 10 PAGES WITH ERRORS. THEIR CORRECTIONS ARE LISTED UNDER THE TEMPLATES SUBHEADING AND UNDER THE CORRECTIONS SECTION. 2) Black-and-white pictures. I couldn't clearly see what was being shown on some pictures; however this only occurred in chapters 4 and 5 which detailed the apogee detector component. 3) Requires substantial time, patience, and precision. This is especially true if it's your first rocket build or your first time operating power tools. 4) Expensive parts costs due to the more than 100 different parts used. 5) Requires many different tools to build. 6) Some parts and tools listed as required are unnecessary and significantly increase the cost of building the rocket. USE DISCRETION WHEN BUYING PARTS OR TOOLS. READ AHEAD AND PREPARE YOUR WORKSPACE ACCORDINGLY! THIS IS A MASSIVE TIME SAVER! 7) A straightforward guide to building one specific type of rocket with absolutely no theory presented that explains how rockets work or why they are built the way they are.

#### Format:

This book consists of approximately 396 pages of detailed steps with 13 chapters dedicated to the construction of each individual component. Their sequential order and respective subjects are listed below. I've included personal tips for difficult chapters. CHAPTER 1: 37 steps - Rocket body ~ Must be perfect or your rocket won't assemble properly. CHAPTER 2: 38 steps Fins ~ Must be perfect. Directly affects flight stability and performance. CHAPTER 3: 45 steps Nosecone ~ You can get creative here, just ensure it fits to the body! CHAPTER 4: 88 steps Apogee detector part I ~ Tedious. Must be perfect! Take your time. CHAPTER 5: 88 steps - Apogee detector part II ~ VERY TEDIOUS! Must be perfect! CHAPTER 6: 90 steps - Parachute piston CHAPTER 7: 58 steps Parachute rigging ~ Somewhat monotonous. CHAPTER 8: 34 steps - Assembling upper body section CHAPTER 9: 59 steps - Nozzle and engine casing ~ Follow the instructions verbatim. These parts hold the physical rocket fuel. CHAPTER 10: 44 steps - ENGINE IGNITER ~ Easy to build. Be patient. If this part doesn't work properly, your rocket will not fire. CHAPTER 11: 57 steps - ROCKET FUEL ;) ~ Best part. EXTREMELY DANGEROUS. Study this section thoroughly. Experiment with different fuel ratios and mixtures. CHAPTER 12: 42 steps - Installing igniter, end cap, smoke element ~ Study thoroughly CHAPTER 13: 19 steps - Assembling upper lower body sections ~ TRIUMPH! For a grand total of 699 steps! Not every step has to be followed, however, as some are simply guidelines.

#### TOOLS AND THEIR

#### COSTS

You CANNOT complete this rocket without the following tools. The Dan Pollino lists alternative hand tools you could use. Building the rocket, however, will take considerably longer and be much more frustrating. DONT SKIMP ON TOOL QUALITY! Here are the tools and what I personally paid for them: Tools Costs: 1) Electric miter saw - \$219 (Dewalt 715 15-amp 12 single-bevel compound) 2) Electric belt sander - \$113.20 (Wen 6502 4 x 36 with 6 Disc) 3) Electric drill press - \$126.47 (SKIL 3320-01 120-Volt 10) 4) Electric mixer \$30+ (already had) 5) Cordless drill \$70+ (already had) 6) Digital food scale - \$12.47 (Ozeri Pronto Digital Multifunction Kitchen and Food Scale) 7) Wok or conventional oven. \$25+ (already had) 8) Extensive drill-bit set - \$24.79 (Craftsman 100-Piece Drilling and Driving Kit) 9) Forstner-bit set - \$50 + (only bought two different sizes. Wish I bought the set!) 10) Spade-bit set - \$41.09 (Irwin Tools 1792761 Speedbor Blue-Groove Pro) 11) Various hand-tools TOTAL ESTIMATED TOOLS COST: \$712.02 DO NOT BUY THE DRILL BITS, FORSTNER BITS, OR SPADE BITS INDIVIDUALLY! You will easily

spend triple or more than what you could have spent on an entire set. .com sells many tools from world-renowned companies. If you dont already own the above tools, buy them off .com!Parts CostsThere are almost 100 different parts needed for this rocket; and their costs add up quickly. You will save a lot of money if you thoroughly examine both the parts list provided on [www.inverseengineering.com](http://www.inverseengineering.com) and the book, then purchase the approximate quantity of each part at a local hardware store.MY PERSONAL TOTAL DOCUMENTED PARTS COSTS: \$648.03This includes parts that had to be repurchased due to errors made during the rockets construction. The author estimates that each rocket should cost about \$300 in parts; which is only possible if you either buy in bulk to make multiple rockets, or if you buy most parts at local hardware stores.TOTAL COST NECESSARY TO COMPLETE A ROCKET: \$1360.05This includes both the parts and tools cost. Very expensive, especially for me, a college student.

#### FINAL

#### RECOMMENDATIONS:

1) For the last time, know what youre getting into. If this is your first major rocket build, it will take a very long time and a lot of tedious work to complete.2) The rocket fuel, both the powdered and cooked mixture (R-Candy), is extremely volatile. Once its lit, it wont stop burning until its completely consumed. It burns extremely hot and releases a great deal of foul-smelling smoke.3) Use airtight glass containers for storing unused rocket fuel ingredients.4) Print all four pages listing the required parts and read each page to determine the quantity of each part needed. Buy as many of them as possible from a local hardware store. This will save hundreds of dollars and wont leave you with leftover parts. [www.Mcmastercarr.com](http://www.Mcmastercarr.com) sells most products only in bulk; therefore you will have many extra parts left-over if you plan on building one rocket. On the other hand, they do have very competitive pricing on bulk-sold parts.5) Buy granulated potassium nitrate; its much cheaper than stump remover, doesnt require a grinder, and is as close to 100% pure as youll ever need. [www.kelp4less.com](http://www.kelp4less.com) is where I bought my KNO<sub>3</sub>.6) Preparing the rocket fuel is very messy and dangerous. Cook it outside if possible. God help you if you use a gas burner and the fuel ignites while cooking it you WILL have a bad day.7) Buy about one pound of two-part epoxy. Its used extensively throughout the rocket.8) Research the characteristics, fuel formulas, and physics of model rockets to obtain a better understanding of amateur rocketry.

#### CONCLUSION:

I love this book, and I will keep it forever as a reference for future rocket builds. As I mentioned earlier, building this rocket is very time-consuming and expensive, especially if youve never built one, or have never used the required tools before. If you dont read through the book and write a parts list, expect to dozens of trips to the hardware store. [www.mcmastercar.com](http://www.mcmastercar.com) is an excellent website to buy parts that arent sold locally. Unfortunately, I made the mistake of buying most parts from them that I could have bought locally; which is one reason why the first rocket cost me about \$250 more than what was estimated.Dont be afraid to use other parts, as long as they wont compromise the integrity of the rocket design. For example, Im obviously not going to spend \$35 on a 5-ft. aluminum rod to core the engine when a \$3.99 wooden rod has worked for all three engines Ive built thus far.So far Ive built the completed rocket and two extra engines for it; one with a 78% KNO<sub>3</sub> + 22% C<sub>12</sub>H<sub>22</sub>O<sub>11</sub> formula, and another with a 78% KNO<sub>3</sub> + 21% C<sub>12</sub>H<sub>22</sub>O<sub>11</sub> + Fe<sub>2</sub>O<sub>3</sub> mix. Each extra engine I made is about five inches longer and two pounds heavier than the original. My favorite chapter is making the fuel, as there are numerous ratios that can be tested to achieve optimal engine performance. My least favorite chapter is making the apogee detector due to the sheer amount of time and precision needed.Looking back on the finished rocket, Id estimate I could build another from scratch in less than two weeks, assuming I had all parts availableBecause this is my first rocket, I don't plan on launching it. Ive invested too much time and money into building it and I'd be rather angry at myself if it were to fail. I may build another in the future, but for now, I'm going to hang it, and my other engines, on my wall and bask in awe at them. After two months of NEVER GIVING UP, I can say with utmost confidence: This was a lot of fun!:)0 of 0 people found the following review helpful. An ok How-To book, but missing information forces you to Customize the nosecone.By Robot CowboyThe book was copyrighted and published in 2011, and I've come across a few hiccups already. The link he provides for the 16 oz. plastic wine glass (for the nosecone), is now a completely different website, and no one from Wal Mart to the discount stores online/in-town have anything remotely like it in Dan's book. His own website, [www.inverseengineering.com](http://www.inverseengineering.com), still works thankfully, but for how long? I remember trying to contact him via this website months ago (April 2015) and he never replied. I also tried to contact him via my Google+ account the same month and again, he never replied. So you have zero support, except from what you can extrapolate for yourself, from his website and his YouTube videos. My suggestion is to download the templates as fast as you can before he pulls the plug on the website all together.As for the the rest of the book, it's very detailed and shows pictures step by step to see if you're on track.Just remember, if you decide to contact your local Tripolli rocket group, they can provide you with a nosecone for a fair price, but you will have to determine the weight and balance, not too mention ensure it can handle Dan's parachute design as well.0 of 0 people found the following review helpful. Very detailedBy Christian K.I found this was a great book for learning how to rocket building. Each step has a picture that goes with the detail instruction. It gives a detail material list and needed tools along with less costly alternatives. The draw back I

have is this book is a how to for one rocket no suggestion to make it smaller or alternate designs. It's also not to model rocketry regulations because it has metal parts, would need to permission and go out to middle of no where to launch. Although I feel if you could make your own substitutes to get around this. The rocket is more advance deffinatly should not be your first model rocket.

What's important when building a rocket from scratch? How about high performance, ease of construction and safety. Let's face it; nobody wants to lose a limb. With over fifteen years experience building rockets, Dan Pollino's latest manual makes this seemingly daunting project simple. You'll learn such fundamental tasks as: Making the rocket body from a drain pipe Making the nosecone from a plastic wine glass Making a piston that ejects the parachute without scorching it Making an electromechanical apogee detector Making the nozzle with cement and a steel washer Making the fuel from ordinary sugar You can do it! With this book anyone can construct a high-quality rocket capable of reaching four hundred miles-per-hour and attaining an altitude of six thousand feet without a machine shop, or even special tools. Free bonus chapters including making the launch rail, making the ignition controller and launching the rocket multiple times are available online. In this easy-to-understand guide you'll find step-by-step instructions to building the perfect rocket without injuring yourself or your wallet. *I Still Have All My Fingers* is the rocket building bible amateur rocket enthusiasts have been waiting for. Dan Pollino's rockets have been featured on G4 TV's "It's Effin Science." His website [InverseEngineering.com](http://InverseEngineering.com) focuses on amateur rocketry in California.