PEAK OF FLIGHT NEWSLETTER

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HOW TO GET MORE ROCKETEERS IN THE HOBBY

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APOGEE COMPONENTS

PEAK OF FLIGHT

How to Get More Rocketeers in the Hobby

By Tim Van Milligan

People ask me all the time how I motivate people to give rocketry a try, so that we can grow the hobby. In this article, I'm going to look at this problem from a different perspective. I am a person with a vested interest in seeing the hobby grow, as it affects our business as well. I'll describe the approach that we use here at Apogee Components to grow our own customer base. And it may surprise you, because it is not the conventional wisdom that most people think of with regards to the issue.

"Success" is the Answer

I think we might all agree that the way to keep people in the hobby is for them to feel successful when they launch a rocket. Success makes the experience fun, and provides confidence and motivation to continue with the hobby. It reinforces their decision to give rocketry a try in the first place.

There isn't much that is very controversial about that philosophy. But where I differ from others is defining success and the process we use to help people achieve success.

My goal here at Apogee Components is to help you and your fellow rocketeers gain knowledge about rockets so that you can accomplish those goals that you have in mind. I want you to succeed.

How do I define success in those terms? I want you to feel confident that you can safely achieve the mission and objectives you set out for your next project. The thing is, most of the time, I don't know what that project is. Therefore, I have to try to have the resources you need available for that time when you need them.

The one resource that every rocketeer needs, regardless of the complexity of their project, is to have good flying skills. This is so important to me, that my very first Peak-of-Flight newsletter was devoted to this topic (download issue #001 at: https://www.apogeerockets.com/education/downloads/Newsletter01.pdf).

FIGURE 1: A SUCCESSFUL FLIGHT AND RECOVERY IS THE EXPERIENCE THAT ALL NEW ROCKETEERS CRAVE.

But this topic of flying skills is not an easy subject to bring up with modelers. Everyone believes that what they do on the launch range is more than adequate. How much skill does it take to set up and launch a rocket, right?

Nobody else talks about it, particularly other rocketry manufacturers, because there is no money to be made on the topic of flying skills. If you lose a rocket on account of poor flying skills, they get to sell you another one. That is where they believe the money is, selling replacement kits and motors.

That is why there has not been a class offered on improving your launch skills. Nor will there probably ever be one. Besides, we all think that we have good enough skills on the rocket range, so who would enlist in such a class? If there was one offered, it would probably have the words "safety class" in it. How boring can that be?

Apogee Components has a different perspective. I believe that there is money to be made in you being

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About this Newsletter
You can subscribe to receive this e-zine FREE at the Apogee Components website www.ApogeeComponents.com, or by clicking the link here Newsletter Sign-Up

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successful. Just a single flight or accomplishment does not define a successful rocketry career. It will take a variety of successful projects for you to feel satisfied. And if you're not satisfied, we haven't achieved our goal either. I believe that is where the money is -- a long term relationship where we assist along the way in whatever project you're working on. We're not the hero of this story… you are.

First of all, if I want to help you achieve success, I want to increase the odds of you getting your rocket back after the end of the flight. Too many rockets are being lost because they drift away. That is not a good user experience in the hobby. Nobody is happy searching for a rocket for an hour, and driving home empty handed.

How do we help with this situation? We try to offer a variety of solutions for this, such as:

- Audible rocket locators that emit a noise to help you track it down.
- Dual-Deployment systems to help minimize the drift of the rocket by delaying the deployment of the main parachute until the rocket is closer to the ground. That way it doesn't drift as far.
- GPS locators for those rockets that drift a really long way over the horizon.
- Gliding parachute systems (coming soon) that can be used to steer the path of the descending rocket so it comes down closer to your feet.

However useful these add-on products are for helping you find your rocket, they have one disadvantage. They add to the cost of the flight.

There is one additional method that can be used to minimize the chances of the rocket being lost, or of walking too far. And its cost is the lowest. That other method is knowing things like where to place your launch pad and where to aim it. This is called "flying skills."

FIGURE 2: ORIENTING THE ROCKET ON THE PAD IS A GOOD EXAMPLE OF A "FLYING SKILL."

Here is the thing…and I'll be totally honest; there is a cost to acquiring good flying skills. The cost is "practice."

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You have to launch a lot of rockets to get some knowledge of how the rocket behaves, and where it is likely to land after you launch it. And with the cost of rocket motors these days, the money can be significant if you do things in the traditional way.

However, most hard-core rocketeers don't consider this cost, because the objective when you go out to launch isn't to acquire flying skills. It is to have fun. Acquiring the flying skill is just a secondary benefit of launching a rocket.

But from a business perspective, this pains me. There are a lot of people that are "one-and-done." That means, they go out and launch a rocket… the rocket gets lost… they are frustrated by the lack of success… and they quit the hobby. After one flight, they are done.

If we're lucky, they may come back and buy another. But "luck" is a poor business strategy for any company to take. What happens if they lose the second rocket, because they weren't paying attention to what they were doing the first time? Now they're even more frustrated, because they have the experience of losing a rocket EVERY time they launch one. That is not financially sustainable; not for the rocketeer, and not for a company like Apogee Components.

Here is where it gets controversial. There are many people who think the solution to this issue is to give the first-time rocketeer a free rocket to launch. That way, they are not out any money on their first launch if they lose it.

Personally, I am against this strategy if an experienced rocketeer is not around when the newbie is launching. The experienced modeler would provide their skills (like: launch site selection, model selection, motor choice, delay selection, rocket prep method, launch pad placement, angle and direction the rocket is aimed) to increase the likelihood of a successful launch and recovery of the rocket.

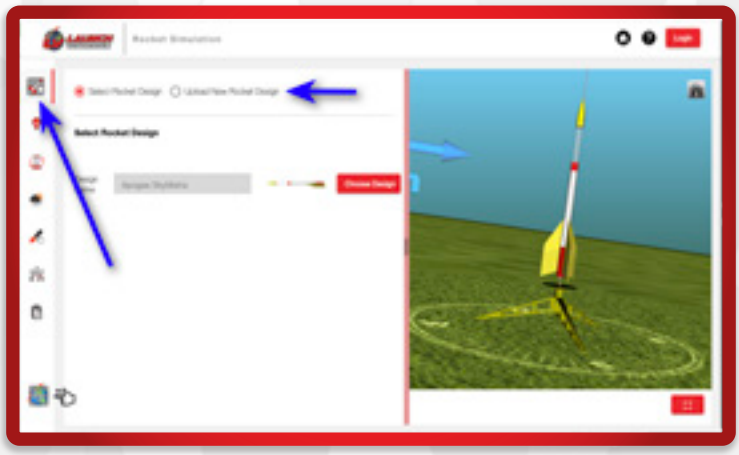

FIGURE 3: SELECTING A ROCKET IS A LAUNCH SKILL. YOU HAVE TO DECIDE IF IT IS APPROPRIATE FOR THE SIZE OF THE FIELD.

Even if there is an experienced rocketeer available to assist, the fact still remains that you have transferred the financial burden of the first-time modeler's experience to another person. For a company like Apogee to give away free rockets, that money has to be recouped by raising prices of rockets that other modelers have to pay. That means you have to pay higher prices for someone else to fly a rocket for the first time -- whether you want to sponsor them or not. I believe that if you want to sponsor a newbie, you'll do it on your own. I don't want to force everyone to

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pay higher prices for a "chance" that the first-timer will want to continue in rocketry.

The question that a lot of people ask me is: "How do you motivate someone to get into the hobby of rocketry?"

Personally, I don't ask that question of how to motivate. I think the real question is: "how do you grow the hobby?" It's not the same question. I don't waste my time on motivating people. You're either self motivated, or you're not.

This has always been my own philosophy: I think you grow the hobby by "identifying" the motivated, and then building them up to make sure they have a successful and rewarding experience. Then their motivation is reinforced and they'll be likely to continue in the hobby.

Now there are two questions:

1. How do you identify the self motivated?
2. How do you build them up to make sure they have a successful and rewarding experience?

The answer to the first question is to let them self-identify themselves as being motivated. I personally just wait until they raise their hand and say: "I'm interested in rocketry, can you help?" In today's internet based society, they typically show they are interested in rocketry by doing an internet search or asking on social media. They show up because they took the first step of seeking out information on rocketry.

"Waiting" is the part that most people have a problem with, because they are impatient and want to take some sort of action to get people to try out rocketry. But then they have to answer the question of how do you motivate? It is an endless cycle that can't be solved.

I'm in this for the long haul, so I have a bit more patience in this regard. You just have to believe that they're out there, and they will self-identify.

It has been my experience in this regard that people see things about space and rocketry in the news (like what is going on with SpaceX or NASA), and that sparks a little interest in them to search for more information. As we say here at Apogee Components, "The First Step into Space is a Model Rocket" (see Figure 4).

FIGURE 4: YOU CAN DOWNLOAD THIS POSTER AT: https://www.apogeerockets.com/Rocket-Books-Videos/Posters/First-Step-into-Space-Poster

Once someone self-identifies as being interested in rocketry, now we get to answer the second question - building them up and making sure they have a successful and rewarding experience.

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Here is where my own "impatience" kicks in. I've waited for so long for them to self-identify themselves, that I won't let them slip through the cracks. This is where I think other people and many rocketry clubs make a small error. They let the interested person languish by deferring their success to some future date. "Just come out to our launch next month, and we'll hook you up," they say.

I don't do this. "Next month?" Are you serious? If you've had any experience with Apogee, you know we answer questions quickly. This is why. If we lose them now by deferring their successful rocketry experience to a future date, they may never come back to the hobby.

But there is more to it than just responding quickly. We start the "building process" at the same time. And the best way I've found to build up a new rocketeer, is to give them something more priceless than a free rocket kit. Give them "knowledge."

The thing about knowledge is that it never decays or loses its value. In fact, it increases in value as time goes by. Once you have knowledge of rocketry, you'll carry it into the future with you, and it grows in importance.

When a new rocketeer comes to us with a question, we'll typically point them to an article or video on our website that will answer their question to help them to be immediately successful. And that information and knowledge they just got is like a virus in their brain, meaning they can't get rid of it.

That newbie's motivation has been immediately rewarded, and they got something else they didn't expect - knowledge. That is the type of feedback loop that just feeds on itself, and grows and grows.

That is how we've grown our customer base, and why it helps the hobby growth right now.

The One Flaw In My Plan for World Domination

I can give our customers knowledge, but it is much harder to give them "skills."

In a way, skills are similar to knowledge, in that they are always carried into the future. Take for example, the skill of sanding a balsa fin. When you first started rocketry, you probably weren't very good at it; I wasn't either. But now that you know how to do it correctly, it is something you'll probably never forget.

But to hone the skill, it takes practice over time. Fortunately, the lengthy practice-time can be shortened with a good instructor. Having a master-modeler mentor you in the skill, by showing you where your flaws are occurring and how to correct those, can have a big impact on the time it takes you to get good at a skill.

This is why I make our Advanced Construction Videos (https://www.apogeerockets.com/Advanced_Construction_Videos/all). Because seeing someone else do the tasks can help you build skills a lot faster.

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Again, my goal is that your "success at the task" isn't being deferred, but that the time it takes is shortened. And that makes you more motivated, because you see successful results quicker.

There are some rocketry skills, however, that are harder to teach. Since they are harder to acquire, it takes longer to be good at those tasks, and that pushes "success" further out into the future. If you don't have enough self-motivation to carry you through the hard times, you may give up on rocketry. A lot of newbies in the hobby are in this situation, and we're losing some rocketeers because they aren't gaining flying skills fast enough.

The flying skills that I think that are harder to teach are:

1. Launch site selection
2. Model selection
3. Motor choice
4. Delay choice
5. Launch pad placement
6. Launch angle and direction

These are harder to teach because the feedback loop (the indication as to whether or not you're successful) is financially more expensive. You have to go out and actually burn a rocket motor to find out if your choices in any of these skills worked or not.

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It's not like learning how to sand a balsa fin. These skills take a lot of practice to learn, and that practice is expensive.

Software to the Rescue?

When we released the RockSim software about 20 years ago, it helped in a lot of ways to increase the flying skills of modelers. It has made motor choice, delay selection and launch angle selection much easier.

In RockSim v10, we further added a feature called "motor recommendation" to the program to make the process even easier. It gives you the answer to whether or not any of hundreds of rocket motors would work with just a single click of your mouse.

But still, motor selection is still causing newbies some anxiety, because they have no reference point in their mind as to what they are trying to achieve. For example, if either a D, E or F Engine will all work in a particular rocket, which one would you choose? The reference point people are missing is where the rocket will land if you use any of those motors.

RockSim can predict the distance the rocket will land, but you really can't see what might be in the landing zone that will make it hard to find or retrieve the rocket. Are there trees or houses in the landing zone area? RockSim unfortunately doesn't address that issue.

This is where the online "Launch Visualizer" can dramatically change the dynamics of the situation. It shows the rocket's trajectory in 3D, flying from any launch point on the planet. So when the rocket starts drifting down to the

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ground, you can easily see what is in the landing zone that might make recovery difficult.

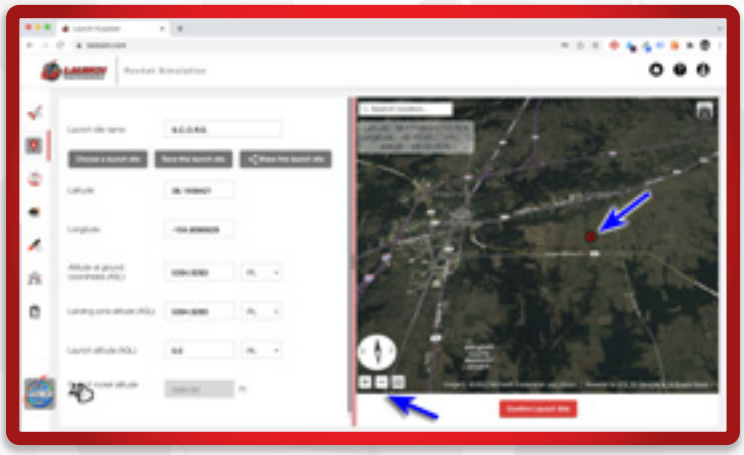

FIGURE 5: SELECTING A LAUNCH SITE AND PAD LOCATION IN THE LAUNCH VISUALIZER. THIS GAME-LIKE ACTIVITY DISGUISES THE PROCESS OF LEARNING AND PRACTICING A NEW LAUNCH SKILL.

The real benefit of the Launch Visualizer is that it decreases the time it takes to gain confidence that you'll have a successful launch -- which includes the recovery of the rocket. In the past, you may not have known which choice you made (site selection, motor selection, delay selection, pad location, launch angle or direction) was the cause of the failure. You would have had to possibly launch the rocket a dozen times to isolate the issue that may resulted in you losing the rocket.

In essence, with the Launch Visualizer, we finally have a tool to teach launch skills. It is both affordable and provides instant feedback on potential success/failure of the flight.

Best yet, it is fun to use. It is almost game-like in how addicting it is. That I think is its secret ingredient. You will enjoy playing with the interactivity of the rocket in its natural environment.

But this is "addicting" in a good way. Each time you click to simulate a launch, you gain knowledge that is useful. It is never a waste of time -- and you'll come away with real launch skills.

I think it is a really sly way to introduce people to the concept of "launch skills." I could preach for years on the necessity of increasing our launch skills, and it probably won't make a difference, because people think they have great flying skills.

But now we can say, "Try this simple simulation in the Launch Visualizer. Do you think the rocket will end up where you think it will? If not, what variable in the situation can you change that will increase the odds of your success?" They won't even know they're honing their launch skills. They'll only know that they are achieving higher success rates of getting back their rocket in one piece and their having fun doing it.

"Launch success" for that newbie modeler will reinforce that their decision to try model rocketry was a good one. If they were successful one time, there is a good chance that they'll want more launches in the future.

And from our perspective, we didn't have to give them a free rocket kit or motor in order to get that feeling of success. They did it themselves! And that is far more motivating than having someone give them success on a silver platter.

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That's why I think this could be yet another inflection point for the growth of the hobby. By getting the newbie rocketeer to use the Launch Visualizer, they'll quickly gain launch skills from the feedback they see on how the rocket behaves. When they launch in real life, they'll be more likely to get the rocket back and feel the blissful satisfaction of making good choices. They'll stay in the hobby instead of being one-and-done.

What I suggest is for you to try the Launch Visualizer today, and see how it could be useful in your own flights. It is at: https://www.rocksim.com.

Then tell those "self-identifying-motivated-rocketeers" you meet to immediately launch some rockets in the Launch Visualizer themselves -- right now -- before you tell them to meet you at the rocket range for the club launch next month. By doing that, you'll give them the gift of instant gratification of a successful launch, and the new knowledge and skills that comes with it.

I'll fully admit this is self-serving, as we could use the business of a new rocketeer in the hobby. But this isn't about Apogee. This is about growing the hobby. We do that by helping the rocketeers that want to be successful in rocketry. Apogee is providing the tool, but to the newbie that you interact with, you'll look like the hero to them. It is your recommendation that allowed them to be successful and to gain new skills that haven't even thought of. So I'd like to be the first to thank you for doing your part to pay forward for the rocketry hobby.

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About The Author:

Tim Van Milligan (a.k.a. "Mr. Rocket") is a real rocket scientist who likes helping out other rocketeers. He is an avid rocketry competitor and is Level 3 high power certified. He is often asked what is the biggest rocket he's ever launched. His answer is that before he started writing articles and books about rocketry, he worked on the Delta II rocket that launched satellites into orbit. He has a B.S. in Aeronautical Engineering from Embry-Riddle Aeronautical University in Daytona Beach, Florida, and has worked toward an M.S. in Space Technology from the Florida Institute of Technology in Melbourne, Florida. Currently, he is the owner of Apogee Components (http://www.apogeerockets.com) and also the author of the books: Model Rocket Design and Construction, 69 Simple Science Fair Projects with Model Rockets: Aeronautics and publisher of the "Peak-of-Flight" newsletter, a FREE ezine newsletter about model rockets. You can email him by using the contact form at https://www.apogeerockets.com/Contact.

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