

PEAK_{OF} FLIGHT

NEWSLETTER

ISSUE 558 / OCTOBER 12TH 2021

IN THIS ISSUE

***HOW ROCKETRY OPENS
DOORS FOR STUDENTS***



**MICRO JOHN
FREE PLAN**

Available in
This Issue!

<https://www.apogeerockets.com/Peak-of-Flight-Rocket-Plans>

www.ApogeeRockets.com

4960 Northpark Dr, Colorado Springs CO 80918

Ph# 719-535-9335

APOGEE
COMPONENTS

PEAK^{of}FLIGHT

How Rocketry Opens Doors For Students

By Tim Van Milligan

The NAR is looking for students that are interested in trying out for Team USA. This group of students will represent the United States in international competition in July of 2023. Being like the Olympics of rocketry, there are a number of benefits that go far beyond just claiming you're a great rocketeer. This article will attempt to explain what those benefits are, and why your participation is important, even if you don't have a child in this age group.

In two years (July of 2023), the next World SpaceModeling Championship (WSMC) will be hosted by the USA and will be held near Austin, Texas. You won't have to travel nearly half-way around the world to prove you are a world class modeler. You just have to go to Texas.

The National Association of Rocketry, which selects the USA team, is particularly looking for Junior participants - youngsters under the age of 19. Our current team is depleted -- all of them have aged out, and are too old to be eligible to compete as Juniors.



How embarrassing will it be for all of us in the NAR if we as a host country can't field a team of junior members? That is why your help is urgently needed.

There are 32 open spots for Juniors and 32 spots for Seniors that have to be filled for the next WSMC, and that is where you might be able to help. I envision that if every NAR and Tripoli rocketry club in the USA could find just one kid, we would have a really strong team in 2023. Think about that--we'd have over a 100 kids to select from for the team.



And you've already seen that one kid at your last club rocket launch. They were the one that was full of energy and was flying every last one of their dad's rockets that they took to the range. They wanted to push the button and launch each rocket skyward.

That is the type of kids we're looking for, and would make great members of the national team. The one that just loves rockets.

Of course they don't know how to build world class rockets. YET!

That is the easy part - bringing them along with new knowledge and skills. That is where the senior members of the USA team are eager to contribute. It is a lot like the annual TARC competition where a mentor is assigned to the younger participants. The difference though, is that "the answer" can be given directly to the participant. You know... "How exactly do you do this so you're successful?", that answer.

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](#)

Newsletter Staff

Writer: Tim Van Milligan
Cover & Layout: Derek Villar
Proofreader: Michelle Mason

Continued on page 3

PEAK^{of} FLIGHT

How Rocketry Opens Doors For Students

Continued from page 2

In TARC, the mentor can only make suggestions, and the student still has to design their own rocket and pick the motors. But in the WSMC contest, the mentor can tell the student exactly what to build that will be successful. However, the mentor can't build or fly the rocket, as that would be cheating. But they can tell them what model will be successful, and they can be right next to them while they are building it.

There is an immense transfer of knowledge in this situation, and the student, if they are willing to devote the time to the process, will be guided by the best mentors available in the world.

This is the approach that I took with my own two daughters over the years. I would literally build a rocket right next to them, showing them the process and all the techniques I had learned. And then they would be building their own rockets at the exact same time. Personally, I got just as much out of the process as they did. I got to spend time with them, and we talked a lot about other things besides rocketry. And while they still think dad is annoying, they got a transfer of wisdom that will serve them very well in the future.

Why should they try out for the USA team?

As you're talking to the parents of that one special kid in your rocketry club, here are some talking points you can give them about why they should encourage their child to "go out for the team."

Speaking from experience with my own children, the biggest reason to do this is because it opens doors to the next phase of their life. Not ordinary doors -- BIG doors.

The world is a very competitive place. It is hard to get people to take note of you, especially old-style institutions like colleges, where students find it hard to stand out and show that they are different from other kids that are just as bright and smart. Every student is trying to pad their resume with all sorts of activities to try to make it into those exclusive universities. Anything to stand out.



But from the admission officer's perspective, the applications all look the same. They are seeing the same types of clubs show up on the applications over and over. While being in 10 different school clubs and activities is fine, if everyone does it, then nobody really stands out as being different.

I can tell you from experience with my own family that "member of Team USA" is different. It will always be unique and vastly different.

Continued on page 4

1:21
SCALE
MODEL

X-15
ROCKET KIT

Apogeerockets.com/X15

PEAK^{of} FLIGHT

How Rocketry Opens Doors For Students

Continued from page 3

Every parent that I know that had a kid on the USA team says the same thing about this opening doors to the college of their choice. The admission officer has never seen anything like this and they always ask questions because it gets their attention. Trust me, they don't ask questions to the kids that have things like student government member on their applications. That is ho-hum stuff that they've seen a million times.

From the admission officer's perspective, nobody has "member of Team USA" on their college application. Remember, there are just 32 slots open on the USA team for junior members. Compare that to the number of valedictorians that they see every day applying to their institutions.

What this means is that your student can have an average GPA in school, and with earning a slot on Team USA, they will stand out -- even over the valedictorians with the highest GPA. The valedictorians are only standing out from the kids in their schools. Rocketeers on the team are standing out from ALL the kids in ALL the schools - not just here in the USA. All over the world! The valedictorian can never compete against that. I assure you that they can't.

That is what I mean when I say that this opens doors. Your student doesn't have to be a valedictorian to earn a spot on Team USA. The only thing they need is a desire, and are willing to put in the effort to build and fly rockets.

Here is the best part... For Junior members (those under 19 years old), it is easy to make the team, because the level of participation is low. Your kids are not having to compete against hundreds of kids; not even against



dozens. We're desperate for kids to be team members - in Romania, we had just three kids. Note: That isn't to say you can just show up and get a spot. You still have to perform by building and flying models successfully.

There are other benefits to being on the team as well, like having fun and making friends with kids from other parts of the world. That is what my daughters will tell you is the biggest benefit to competing in the World Spacemodeling Championships. They are far more extroverted than I, and they make new friends easily.

Continued on page 5



THE #1 CHOICE FOR
L1 CERTIFICATION

ZEPHYR

Apogeerockets.com/Zephyr

PEAK^{of} FLIGHT

How Rocketry Opens Doors For Students

Continued from page 4

But as a parent, what I noticed is they are much more eager to learn foreign languages. They just want to converse with their new friends in their own language. I don't have to get on their case about this subject at school anymore. They can personally experience the advantage of knowing other languages because their cool new friends are speaking it. Therefore they are more dedicated to it in school than they would have been otherwise.



One of the things that I noticed at the event in Romania in October 2021, is the intangible benefit of the kids learning what it really means to be part of the team. Once they earn a spot on the team, they have to switch over to the mindset of being a teammate. What does it mean?

This is different from what kids experience as part of most team sports. In sports, like baseball, basketball or football, the star player can carry the rest of the team to victory. It isn't like that in team rocketry. Every individual has to carry part of the load for the team to succeed. Because of this, you see real teamwork among the kids. They help each other out, and lift each other up when they are struggling.

I remember a vivid example of this in 2018, when my daughters were part of the three-person altitude team. The object of the event was simple -- to fly as high as possible using a two stage rocket with a total power of an A-engine. Obviously, only one person could win as an individual. But to win the team medal, all the members on the team have to do well.

My oldest daughter, Allison, was having a great day as an individual. Her flights were really good. She won the silver medal, only being beat out by a rocket that went 0.8m higher than hers.

But my other daughter, Ashley, was struggling in the event. Her first two rockets went unstable and were disqualified. She was down to her last flight to get any type of altitude score. We were all urging the kids on, because we could see from the scoreboard that with any decent flight from Ashley, the team could win a medal. But if she disqualified another flight, then the team would be out of contention for any medals at all.

Continued on page 6

Join Tripoli.org
Mention Apogee Components

SOLUTIONS FOR TARC

THE
AMERICAN
ROCKETRY
CHALLENGE

• SUPPLIES • INFORMATION
• EGG PROTECTORS • MOTORS

Apogeerockets.com/TARC

PEAK^{of} FLIGHT

How Rocketry Opens Doors For Students

Continued from page 5

You could see the effort swelling up amongst all the other kids on the US team, even those that weren't involved in that particular event. They wanted the team to be the winner, not just one individual.

They got Ashley's flight off and it went OK, and they were all cheering and high fiving each other. But that lasted all of 10 minutes -- at which time it was discovered that the altimeter in the rocket did not get any reading at all. Even though it was a successful flight, it wouldn't count and the team wouldn't get any medal at all.

It was at this point that the real genuine teamwork kicked in. As a spectator, it was amazing to watch. I have never ever seen such focus and determination from the entire group of junior team members. In less than the available 7 minutes left in the launch window of the contest, they helped her prepare a very complex rocket, set up the launch equipment (since they tore it down after the last launch), got it into the air successfully, and tracked down the rocket after she launched it. After the altimeter was read, we weren't surprised to learn that it actually wasn't a tremendous flight at all altitude-wise. But it counted for the team, and that is what really was important.

Most of the kids were not involved in the altitude event, but it was the team that got the glory. Gold medal glory. And they were a part of the team.

Notice that it wasn't the star player that carried the team to victory -- it was all of them working together. Each one doing a small but important part. It still gives me goosebumps of pride when I recall this event. I wish that I could claim that I had something to do with it, but it really was something they did by themselves.

In today's world where it seems like "participation trophies" are the norm, you don't seem to see a group of kids that really put in the effort to help someone else succeed. I wish that every kid could experience what teamwork really looks like, and how they benefit even if they don't get any glory for themselves as individuals.



The Way The USA Team Tryouts Work

In international contest flying there is a mix of altitude, duration and scale rocketry events. Most of the duration events are limited to an A-engine, because these world-class models can stay in the air so long that they are easily lost. If you used a B-engine, they would definitely get lost every time. The A-engine duration events are: streamer, parachute gyrocopter, and rocket glider. There is a second glider event for RC models that combines duration aloft with precision landing skills.

Continued on page 7

CHECK OUT THE APOGEE  PAGE
CLICK OR  HERE FOR OUR HELPFUL
AND INFORMATIVE HOW-TO VIDEOS
ON MODEL ROCKETRY

Apogee
COMPONENTS

PEAK^{OF}FLIGHT

How Rocketry Opens Doors For Students

Continued from page 6



Then there are two scale model events. One is the prestigious event called S7, where big and highly detailed scale models are given points for craftsmanship and flight success, and the highest points wins. The second is a scale-altitude event where a model gets craftsmanship points for quality workmanship, but it also gets points for how high the model flies. Finally, there is an egg-lifting contest that is very similar to the TARC event. The difference is the rocket has to fly three times, and you can't take the egg out to see if it is cracked until after the final flight.

The contest rules for each of these events are strict, as there are size and weight parameters that must be taken into account. You just can't show up with any model - it has to stay within the rules set up by the international consortium that runs the contest (called the F.A.I.).

The team-selection contest is broken up into eight individual events. You can try out in as many of the eight individual events as you wish. Most people do, in order to just try to win a spot on the team in one event.

There are three individual spots for each event on the team. So on the final team, there will be three people selected for streamer duration, three for parachute duration, etc. With eight total events, the maximum size of the team would normally be 24 contestants. However, the international consortium has instituted a rule that allows a fourth person in each event, as long as one of them is female. They did that because they wanted more girls from countries other than the USA - as we always have had good participation from girls. Potentially, this could mean as many as 32 people could be on the team. However, an individual can also be selected for multiple events, so the team is usually smaller than 32 contestants.

As an individual, you can try out and do well in many of the eight events. But the team normally limits each person to just one or two events for the actual WSMC against other countries. So while you may have won first place in five events, the team will ask you to pick a maximum of two events to concentrate your efforts and skills. Why? The team has learned that it takes a lot of hard work to be really good at any single event, so they don't want you to be diluted by trying to do too much work. Speaking from experience, this is a really good strategy and helps keep individuals from getting overwhelmed and just putting in a half-hearted effort in many events rather than getting really good at just one or two events. It makes the team stronger.

Once you have been selected to the team, this is where the real hard work starts. You have to hone your skills by

Continued on page 8

SCALE KITS

More than 60 choices

www.ApogeeRockets.com/Rocket_Kits/Scale_Rockets

PEAK^{of} FLIGHT

How Rocketry Opens Doors For Students

Continued from page 7



building and flying a lot of rockets for your event(s). But it also changes from being an individual member to being a team member.

The team pulls together to make sure that each individual has the latest information on what it takes to win an event. There is a lot of sharing information and techniques, which is another benefit to being on the team. But I have to say that even if you don't earn a spot on the team, the information sharing is still available to you. The modelers on the team are very generous with their time, knowledge and wisdom. They also know that information from non-team members can be critical to success.

In a normal situation, there is nearly a full year of preparation for the actual WSMC. So typically the team is selected the summer before the actual contest against

other countries. The NAR is currently setting up the tryout schedule for the team that will be selected for the 2023 WSMC in Texas. So we anticipate that the team will be selected by next summer - which is less than 9 months away. They will post the tryout information when it is finalized on their website at: <https://www.nar.org/fai-spacemodeling/>

In the mean time, I have to urge you who are interested in trying out for the team to start honing your building and flying skills now. And if you are in a club, start tracking down that one-special-kid now. We need you to recruit them so we have a strong team and every part of the country has a kid to root for.

You can check out the NAR's website to get more information on the rules for each of the 8 events, and also see plans for rockets that would be successful.

Apogee Components also has models that would be a good starting point for getting familiar with the different events and that conform to the FAI rules. You can check them out at: <https://www.apogeerockets.com/Model-Rocket-Kits/FAI-Competition-Kits>.

Coming Soon

Since coming back from the 2021 WSMC held in Romania last week, I have a lot of information that I think you may find interesting. I want to jot down my impressions of modeling outside of the USA, and what I learned from the trip. And in preparation for the contest, I came up with a lot of "how to" information that you can use to build better rockets. I'm pretty excited about the new stuff, and I can't wait to share it with you.

Looking for
SHOCK CORDS?

www.ApogeeRockets.com/Building_Supplies/Parachutes_Recovery_Equipment/Shock_Cord



Check out our website
for a selection of:

Kevlar, Elastic, Rubber Ribbon cords
Low Power, High Power

PEAK^{of}FLIGHT

Micro John Rocket Plan

Micro John Parts List

- 19612 - (1) VF TRANSITION 13-18MM (3/pk)
- 19807 - (1) VFNC-18 Ogive (3/pk)
- 10063 - (1) 13MM X 18" BODY TUBE (BT-5)(6/pk)
- 13052 - (1) 1/8" LAUNCH LUG(6/pk)
- 13021 - (1) CENTERING RING 10MM TO 13MM(6/pk)
- 14098 - (1) BALSA SHEET - 1/16" X 3" X 18"
- 30303 - (1) MYLAR STREAMER 2IN X 56IN(2/pk)
 - 3 grams of clay for nose weight

Build Notes

- Cut the streamer into a 1 inch wide by 36 inch long section
- Cut a 4 inch length of the 13mm tube for use as the body tube
- Apply wood glue to the outside of the 10mm to 13mm centering ring before inserting it as a thrust ring, use a spent 13mm motor to push the thrust ring until only 0.25 inches of the motor is poking out the bottom. This should result in the thrust ring being glued in place 1.5 inches from the bottom of the body
- Cut the bottom 0.5 inches of the nose cone shoulder off before fitting to the transition



Micro John *By Christopher Texler*

About the Design

The Honest John Short Range Ballistic Missile, which this rocket is based on, was the first U.S. surface-to-surface missile capable of carrying nuclear warheads. The original Honest John was first tested in 1951 and stood at a height of over 27ft with a launch mass of 5,820 pounds.

The Honest John Missile quickly became a very popular rocket, with over 7,000 units produced and units being deployed all over the world from Belgium to Taiwan. Even after the last Honest Johns were retired, they left a lasting impact in the world with their very distinctive silhouette and the image of U.S. military power that they portrayed.

The design for the rocket in this plan came from when I was looking at nosecones for a different project and noticed that one of the Apogee 18mm nosecones had a very similar shape to the nose cone of an Honest John. Immediately, a vision of a micro scale, 13mm Honest John popped into my head as something that needed to be built.

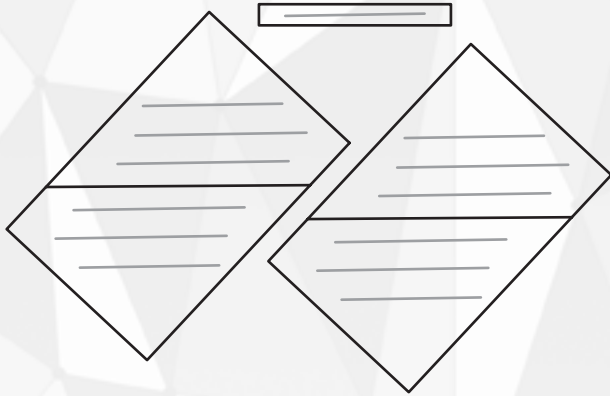
The micro scale Honest John, or "Micro John" that resulted from this build process ended up being a really cute and cool rocket that is perfect for casual flying days at the park or super scale competitions. Also, with this rocket being able to fly over 500 ft on a 1/2A size motor, it's definitely no slouch in the altitude department!

PEAK^{OF}FLIGHT

Micro John Rocket Plan

Continued from page 9

Fin & Launch Lug Template



Decal
White

U.S. ARMY

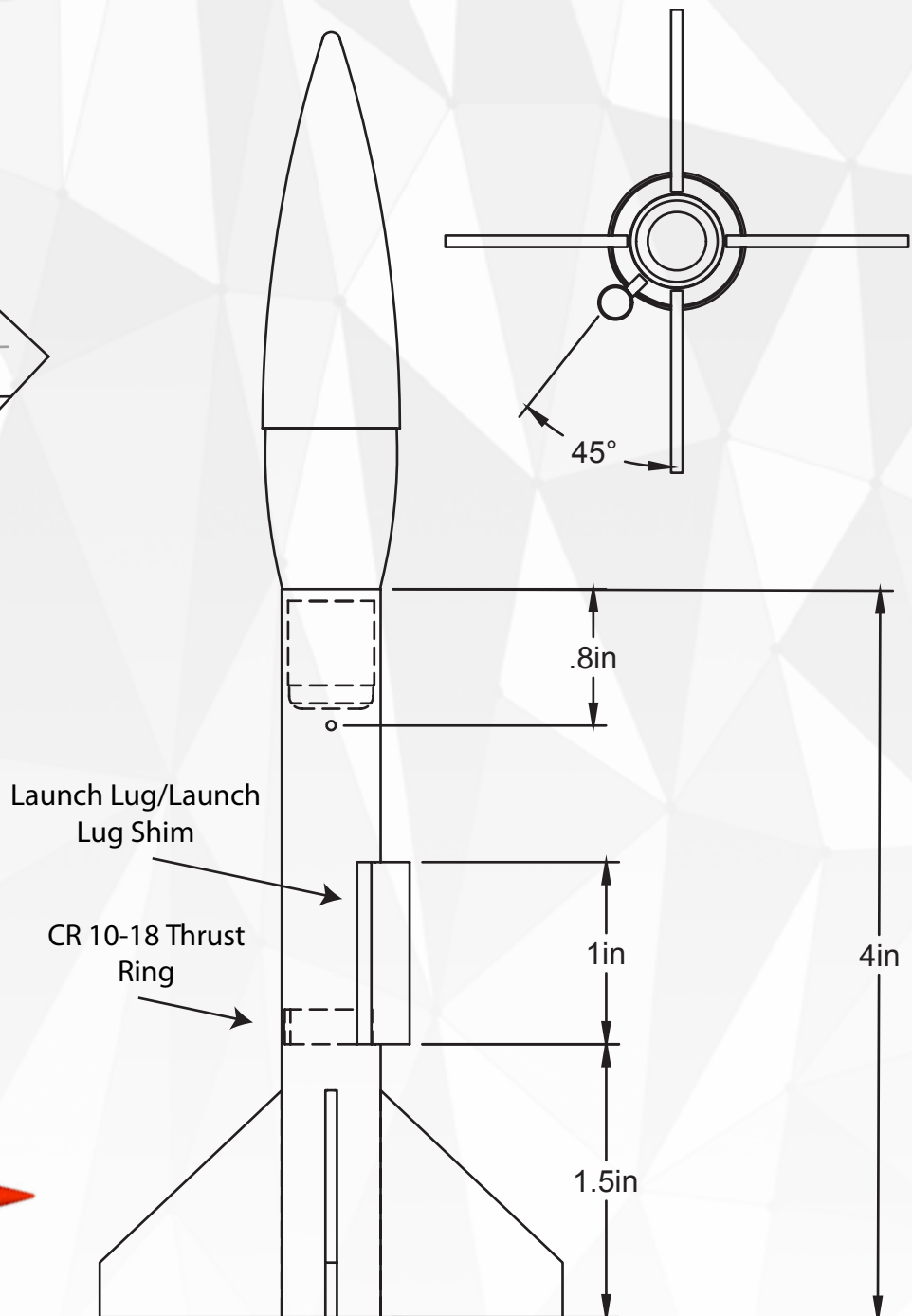


Alternate Paint Scheme



Side View

Rear View



Check out our Facebook page
www.facebook.com/ApogeeRockets



NEED A PARACHUTE? APOGEE HAS THE ONE YOU'RE LOOKING FOR!

www.ApogeeRockets.com/Building-Supplies/Parachutes