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APOGEE PEAK OF FLIGHT NEWSLETTER

Sci-Fi Story:

Alien Defense Command

How To Start A Rocketry Company: A History of Apogee Components

APOGEE COMPONENTS

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SCI-FI STORY: "A.D.C (ALIEN DEFENCE COMMAND)"

ed-- If you remember, a few months ago, I held an essay contest. The purpose was to put a story to the images that Shrox had created in this newsletter. The story that follows came in a little past the deadline for the contest, but I was given permission to print it anyway.

What I like about this story is that we can get a glimpse into the mind of a 11 year old rocketeer. As you read it, you'll see the gears inside his head churning out a story with a lot of dramatic plot twists. I'm sure you'll remember back to your own days of youth, and how you used to make up similar stories. As I was reading this, I had the same thoughts going through my mind. And out of habbit, I picked up a pencil and pretended it was a tiny model rocket. ZOOM!

-- Tim Van Milligan

A.D.C (Alien Defense Command)

by:
Christopher Nycz
Wallkill, New York
Age: 11 years old

The date was June 12, 2010. The Alien Defense Command, ADC, picked up a UFO on radar. The alien ship was headed for Boston.

Boston residents walked outside of their apartments and homes to see the ship. The ship was a massive black circle hovering above the city. People in the city started running in fear.

At ADC headquarters, the commanders started arguing about what to do. The command center tried to contact the ship. The alien craft started to listen to talk on Boston's radio stations. By listening they learned our language and tried to communicate.

The people at the ADC were listening anxiously. Then a transmission came in over the radio. The people in the center were stunned by what they had heard. The alien broadcast said, "We will destroy you". Everyone was stricken with fear.

The ADC contacted the President of the United States. The President ordered the full evacuation of Boston. People started to flee the city. The aliens saw the people attempting to leave. The alien ship fired missiles around the perimeter of Boston. Fires started and people were trapped.

ADC got another message. This time the aliens said, "You have 7 days to surrender your freedom or else you will be destroyed"! The President was informed of this message. He ordered a remote control helicopter to try and enter the city. If the helicopter made it into the city then they would evacuate the people by helicopter! The unmanned helicopter headed for the city. When it reached the perimeter, the alien ship fired at the helicopter and blew it up. The residents of Boston watched the flaming ball fall from the sky. With it went their hopes.

The ADC knew it was time for extreme force. To battle the aliens they designed two types of missiles. The main missile was the Bolaero/Z. The other missile was called the Bolaero. The Bolaero would land on the alien ship but would not explode. It was designed to push the ship away from the city to an unpopulated area. In the case of Boston, it will push the alien ship out over the ocean. The Bolaero/Z is the explosive missile and will destroy the alien craft. It was decided to use five of each missiles.

The President was informed about the plan. The President wanted to try to negotiate with the aliens and not start

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a war between our two worlds. The commanders at ADC told the President that we were already at war and this is the only action that will stop further alien attacks. The President gave the order to put the ADC plan in progress.

The ADC started to prepare the rockets for launch. The rockets were set up on launch pads and they were filled with fuel. With only 30 hours until the alien's deadline the five Bolaero's were launched. Only three of the five missiles were needed. The other two were sent up as a backup. As the rockets approached the city, the saucer came into sight. Missiles were fired from the alien craft. The Bolaero missiles started to dodge the alien missiles. One of the alien missiles made contact with one of the Bolaeros. The missile exploded into a ball of flames. The camera from another missile caught the explosion.

The people at ADC that were controlling the Bolaeros tried to be more careful. Meanwhile, the residents of Boston watched as their last chance to live flew right above their heads. Three of the Bolaeros missiles made it to the ship. They landed a little above the engines as planned. The alien craft fired at the last Bolaero. The alien missile hit the Bolaero and the rocket exploded just 20 feet away from the UFO's engine. The UFO's engine was weakened by the blast. It could no longer resist the Bolaeros.

As the Bolaero missiles pushed the UFO the Boston residents started cheering. It finally seemed like the mission would be a success and they would live.

The President gave the order to launch the Bolaero/Z's. ADC launched the missiles. All five were headed for the alien craft. As the Bolaero/Z's were coming into range the UFO fired at the city. The Boston residents watched in horror as a swarm of black alien missiles came toward them like a raging bull. All hope was fading. The city seemed doomed.

One Bolaero/Z saw the attempt. The missile's course was changed and was headed toward the alien missiles. The other Bolaero/Z's increased their altitude to avoid being destroyed. The single Bolaero/Z stopped the alien missiles with just seconds to spare. Boston residents watched the explosion above their heads. They were relieved.

The explosion sent a shock wave which hit the Bolaero's that were pushing the alien ship. The ship started heading back towards the city! The Bolaero/Z's increased their speed. If the UFO made it back to the city then the city would be done for.

The ADC was getting ready for other possible threats. The Bolaero/Z missiles were being fired at. They were within 100 feet of the UFO. Finally one of the Bolaero/Z's made contact. Then another made contact. Soon all four Bolaero/Z's had contacted the alien ship. The UFO started going down. Flames were bursting from it's sides. All of Boston was cheering. The UFO then splashed into the water. Waves from the impact splashed onto the shore. Then someone at ADC saw something coming from the sky. The celebration was cut short. A missile was coming from space. ADC locked onto the missile and fired immediately. The missile exploded in mid air. Fire filled the sky. The ADC had picked up a UFO retreating into space. The war was won. The news spread throughout the nation. Soon helicopters bringing supplies made their way to Boston. It took three months to stop the fire surrounding the city. Ninety three people were killed by either the fire, shock or suicide. After this attack the Bolaero and Bolaero/Z missiles were installed at all military bases. The importance of these missiles for defense was proven. The earth was now safe from future alien attacks.

Do you want to see the plans to build your own bolaero rocket? Check the apogee web site at:

http://www.apogeerockets.com/shrox/bolaero.asp

Archives of this Newsletter

All the articles that have appeared in this newsletter are archived at http://www.apogeerockets.com/education/newsletter_archive.asp

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APOGEE COMPONENTS: A SHORT COMPANY HISTORY

By Tim Van Milligan

I recently received a letter from a high school student. He was writing a report for a class he was in called "Manufacturing and Industrial Marketing." I don't know why he choose Apogee Components for his case study, but what he wanted to know was a history of Apogee Components.

To begin, Apogee Components was founded in 1987 by Edward LaCroix. At the time, he was living in Minneapolis, Minnesota.

Ed was a hardcore rocketry competitor, and he was always on the prowl to find advance materials from which he could make models having higher performance during rocketry competitions. So the initial offerings of the company were competition oriented.

At first, he started with just the high tech materials which included:

- Phenolic resin impregnated body tubes (which he called "BlackShaft" Tubes)
- Injection molded parabolic nose cones (also black in color)
- Blow-molded nose cone for carrying eggs - called the Nova Eggcone
- Ultra-thin fiberglass sheets for making fins - which Ed named waferglass.
- 1/4-Mil Aluminized Mylar® sheets from which parachutes were made
- High tech Micafilm® streamers
- A easy-to-adjust launch tower called the "Medalist tower."
- Plus lots of little parts like centering rings, tube couplers, engine blocks, launch lugs, and high-tac polyester tapes.

Once he had all the parts, he then added a series of competition kits to the product line, which proved to be very popular among NAR members interested in competition - including me.

The company made a big advancement to the hobby in 1990 when Ed introduced the mini size (13mm diameter) B7 and the short C10 (18mm diameter) rocket motors. The advantage of these motors was that they really upset the status quo in competition. All of a sudden, you had a motor twice as powerful as the Estes Mini A3 motor, but nearly the same size.

These new motors were named "Medalist" motors by Ed, and are still part of the Apogee product line today. There are many more "Medalist" motors that were added to the family over the years, each one proving to be popular with modelers wanting high performance from a small propulsion unit.

Somewhere around 1992, Ed hooked up with a new rocket company called Quest Aerospace. That company was based in Phoenix, Arizona. So Ed packed up Apogee Components and moved it down to the desert of Arizona.

Even while working for Quest, Ed kept Apogee Components going, providing customers with the high tech parts and motors that were needed to be successful in rocketry competitions. But the company stayed small, and is was basically operated out of Ed's garage for several more years.

While Ed was running Apogee, I was working at Estes as a rocket designer. I started working there in August of 1991, and in February, 1994, I got fired. I was now out of work, but I really enjoyed designing rockets. So I approached Ed and told him of an idea I had for a new smaller size competition rocket motor.. Ed was a bit excited by it, especially since he had quit working for Quest. He thought that the new motor, a new designer, and some new rocket kits could breath some new life into Apogee Components.

So even though I didn't work for Apogee, I was designing the new motor. Unfortunately, it took a long time to bring the motor from concept to production.

During that development time, Ed got a job offer to be

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the marketing director for Aerotech. Since Apogee wasn't very big he decided to take the job. I couldn't blame him, as I wanted a steady paycheck too.

With Ed now working full-time for Aerotech, the little Apogee Components was slowly declining. So Ed called me up one day, and said: "Tim, do you want to take over?"

Since I had already invested my life's savings into the new rocket motor, I told him "yes."

The one thing that I really liked about Apogee was that Ed had gone to great lengths to provide superior customer service. There were two benefits from this. First, he had developed a "brand name" for the company. People recognized the name "Apogee." They associated it with good products. At the time, I felt that this would translate into less advertising expenses.

Providing superior customer service also created a lot of very loyal customers. These people were likely to buy again in the future. It was from that base that I saw a lot of upside potential.

The downside of me taking over the company was that I was broke. The only thing that I could afford was the name of the company and a small assortment of parts to sell. So Ed did his best to sell the rest of the assets to other people to recoup his expenses. For example, he sold the rights to the Medalist Tower to Balsa Machining Service, and a lot of the kits and competition supplies to Eclipse Components. The Nova Eggcone mold went to Custom Rockets company.

In 1995, I incorporated Apogee Components here in Colorado. At the time, I was still living in a tiny apartment in Cañon City. I didn't even have a garage to store stuff, so Apogee was crammed into the 10×12 foot empty bedroom in the Apartment.

I was lucky to be married to a wife that allowed me to work for many years without contributing to the family income. So we scraped by for several years in that tiny apartment while Apogee Components slowly grew. Nearly everything Apogee made went right back into the company to buy materials to make it grow.

In 1997, my wife and I moved to a townhouse in Colorado Springs. The main reason was that my wife had a new teaching job, and commuting 65 miles to work was out of the question. But having the new house allowed Apogee to expand. I moved out of the 10×12 foot bedroom into a basement that was double that size. The house also had a garage, so Apogee Components could now be considered a garage operation again.

By 1998, Apogee was bursting at the seams again. The basement and the garage were not big enough. And it was getting too busy to operate as a one-man operation any more. I needed help. But I didn't want new employees to come to work in a garage. So I started looking for a commercial building. That first real building was located at 630 Elkton Drive. We stayed in that building for three years. And during that time, Apogee continued to expand.

This past spring, we out-grew the building at 630 Elkton Drive, and we moved just down the street to our current location at 1130 Elkton Drive. This building has twice the floor area as the previous one. We're still small, but 2,500 square feet is a lot of room to fill. I'm just hoping that when the lease is up at this building, we'll be bursting at the seams again.

Looking back over the history of the company, I'd say that the one thing that contributed to its growth is a consistent pursuit of providing great customer service. If you can't keep customers coming back again and again, it would be difficult to stay in business in this industry. The hobby is still pretty small, and the total number of customers isn't big enough to just toss aside customers after they've made just one purchase.

I've come to realize that there are only two things you can do to keep customers coming back: low prices and good service. Of those two, providing good service is the most important. Low prices but terrible service is always a recipe for disaster. On the other hand, it is possible to survive with great service, even if your prices are higher. At Apogee, we try to do both, but service will always take a higher priority.

Over the years we've also have done our best to be innovators in the hobby; just as Ed did when he started the company. We were fortunate to release several ground-breaking products that have generated a lot of excitement in the hobby. Things like:

•10.5mm Micro Motors
•18mm D10 Medalist motor
•13mm C7 Medalist motor

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•Informative books like "Model Rocket Design and Construction," and "69 Simple Science Fair Projects with Model Rockets: Aeronautics."
•RockSim Software
•AeroCFD Software
•FinSim Software
•Splash Software
•Molded helicopter hubs
•The 1/70th scale Saturn V and the Saturn 1B rocket kits

But I won't say that having the best products has been the key to our growth; even though I feel Apogee Components has the best products. I've seen a lot of really great products just die on the shelves.

An example of a neat product that didn't make it was the molded helicopter hubs. They were one of my favorites, as I love their complexity. The hubs really revolutionized helicopter models and made it easy to get consistently good performance from difficult rockets. But they were expensive to produce. That is why they probably sat on my shelves for such long periods of time.

other failures

Apogee has also had our share of failures. I've made some bonehead product selections over the years. But those are relatively easy to fix. Just dump them as fast as possible and put more effort into selling the good ones. You can't become too attached to any one item. If it doesn't carry its own weight, it needs to make room for other items.

I've also spent a lot of money on failed advertising promotions. The biggest flop from a sales perspective was the time I gave a $500 prize to the winner of NARAM. The guy that won it thought it was a great promotion. But it didn't help the bottom line of the company at all. It didn't even show up as a blip in sales.

But the biggest blunders I've made — and the ones that still hurt — are the ones where customers have felt they didn't get treated fairly by Apogee Components. These are the ones that keep me awake at night. I've tried to always give customers the benefit of the doubt, but sometimes I simply screw up. But to the customer, there are no second chances. I've lost them for life.

So there you have it; the abbreviated history of Apogee Components. I tried to hit the key things that make us what we are today. But I did hold back some of the other tricks and tips that I've learned about running a business in this industry. If I ever decide to sell the company, I need to offer some advice to help keep the company profitable for decades to come. I certainly hope that Apogee Components will be around a lot longer than I am.

about the author:

Tim Van Milligan is the owner of Apogee Components (http://www.apogeerockets.com) and the new rocketry education web site: http://www.apogeerockets.com/education. He is also the author of the books: "Model Rocket Design and Construction," "69 Simple Science Fair Projects with Model Rockets: Aeronautics" and publisher of the FREE e-zine newsletter about model rockets. You can subscribe to this e-zine at the Apogee Components web site, or sending any message to: ezine@apogeerockets.com with "SUBSCRIBE" as the subject of the message. This article may be reprinted as long as this paragraph is also included.

TODAY'S (OLD) JOKE

There are three engineers travelling in a car: a mechanical engineer, an electrical engineer and a computer engineer. The car breaks down.

"Sounds to me as if the pistons have seized. We'll have to strip down the engine before we can get the car working again," says the mechanical engineer. "I thought it might be a timing problem," says the electrical engineer, "or maybe a faulty plug lead." They both turn to the computer engineer who has said nothing and ask, "Well, what do you think?" "Ummm - I think we should get out of the car and then get back in again."