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# the **KOSMONAUT**



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## ANNUAL MEETING KICKS OFF IN STERLING

REPORTED BY DUANE LANTERMAN

The annual KOSMO meeting kicked off the New Year at the home of Luke Dyson and family in Sterling, Ks. As we walked into the door of the game room we were treated to one of Luke's other hobbies, restoring old video and pin ball games. Needless to say it didn't take long for us to try our hand at some of these old classics. Our attention was diverted as the pizza arrived and after a satisfying meal from the HUT the meeting began in earnest.

Called to order by President Keith Ravenstein with ten members in attendance, the minutes were read from last years meeting and then the treasurer gave her annual report. Financially, the club appears to be in good shape. The election of officers then followed and as there were no new names nominated the old officers agreed to continue in their positions.

Those officers are - President Keith Ravenstein  
Vice President John Palmer  
Secretary Duane Lanterman  
Treasurer Sharon Lanterman  
Sr. Adviser/Contest Director Steve Saner  
Webmaster Steve Saner  
Historian Evan Beckman

Old business brought to our attention was the creation of a CD which will contain the past ten years of digital issues of The KOSMOnaut. This project will be taken on by our Historian Evan Beckman. He hopes to be able to do it in an e reader type of format. He would also like to include past pictures or videos. If you have pictures or videos please put them on a zip drive and bring to one of the early launches this year so that Evan will be able to distribute the CD at the 2018 annual meeting.

Next on the agenda was setting the launch calendar for the year. We are planning on a launch each month March – Nov. The Springfest launch at our high power field has fallen victim to the Kansas winds the past few years, so this year we have our initial date with two back up dates. Hopefully this will give us one good day ! The full calendar of events is listed elsewhere in this issue.

We then moved on to setting the events for our 37<sup>th</sup> annual contest KRAMO. Before we got down to that business we discussed the probable changes to the contest events in 2018 which are considerable. The contest events are listed elsewhere in this issue.

There were no Jr. NAR sponsor candidates at this time.

The KOSMO Traveling Trophy for significant contributions to the club during the year will be shared by two deserving candidates, Steve Saner for his work with NARAM 58 and the software that made registration possible and Keith Ravenstein for his work with the CosmospHERE and their Xtreme Camp and the production of our Cushman mobile fire fighter and trailer. Thanks to both of you for your outstanding contributions.

We will be applying for one of the NAR Safety grants to help Keith with the cost associated with the Cushman vehicle.

**ANNUAL MEETING CONTINUED** – Duane Lanterman had discussed back in November the possibility of the club acquiring a 4' mini rail for model rockets. We currently have access to 3 rails for high power rockets. The rail would provide an extra layer of safety for our launches as it would eliminate "rod whip" which sometimes occurs. There are several sources for the 2020 alloy t-bar and Steve Saner agreed to check out the prices and availability. Look for the rails to be available perhaps as soon as our March launch. Several members also expressed interest in acquiring the rails for themselves. Buttons can be purchased at [asp-rocketry.com](http://asp-rocketry.com). and perhaps other sources. Duane and Keith will check into acquiring those.

At the present time there were no order request for motors or LOC supplies.

Steve Saner handed out to members present some very cool laser made wooden pins that were replicas of the KOSMO logo. Nice job Steve.

In regard to static displays for the club the Maker Fair in Wichita is a possibility later in the year. We will check into this possibility as dates are made available.

Keith Ravenstein displayed some parts that will be incorporated into the 2017 club rocket. Orders for this kit were taken and as of press time there have been 8 ordered. If you desire to have one of these 3" diameter kits please contact Keith at [fstnfo@hotmail.com](mailto:fstnfo@hotmail.com). Initial run of this kit will be around 16 units. It will be interesting to see the painting variations on this rocket as they appear on the field later this year. The models will be available for pick up at the SpringFest launch.

As the meeting drew to a close it was time for Winter project show and tell. John Palmer had recently finished his Estes Comanche 3 (mini version) and one of the new Estes Honest Johns. Duane Lanterman brought his BMS 3" school rocket with Estes "Silver Comet" decals and his ASP WAC Corporal which will get a paint job and be ready to launch this spring. Finally, Steve Saner bought his Guillotine Fin Jig. He had ordered the plans from the designer and built the box at the Wichita maker facility. He demonstrated how it works and has plans perhaps for a larger unit and some modifications of his own. This is a very cool practical tool. Completed units can be ordered from Apogee.

We thanked our host the Dyson's and look forward to a great year of building and launching.



Illustration 3: John's Honest(ly) John and Comanche 3



Illustration 2: Duane's WAC Corporal and School Rocket



Illustration 1: Steve and his Guillotine Fin Jig



Illustration 4: Games and as you can see in other pictures, more games !



# Night Flight Rocket

by Steve Saner

Four or five years ago I was faced with wanting to come up with a rocket to fly at the Night Flight launch. I wanted something that would be bright and make an impression. What resulted has flown at each Night Flight that we have had since. Duane asked me to write a little bit about it. A few years earlier, someone had given me one of those clear plastic tubes full of un-popped popcorn for Christmas. The popcorn having been popped and eaten, I, of course, kept the tube because surely I could make a rocket out of it. There were also two black plastic caps that slid over each end of the tube, quite snugly, to close it up. I thought I could put some LED lights in the tube, but I wanted something reflective as well.

I had come across a mail-order place called American Science and Surplus. They carry a wide assortment of crazy things that they manage to get in surplus. I found there, four super-bright LEDs as well as some adhesive backed “paper”, kind of like contact paper, that has a very reflective surface. It’s almost like it has a bunch of prisms on it, but it is smooth and flexible. Just what I needed. I cut an eight inch piece of my clear tubing. I also cut a piece of BT-20 tube the same length and made a couple of balsa centering rings. I cut out and stuck some of the reflective material on one side of each centering ring and glued them to the BT-20 about an inch from each end, with the reflective side facing each other. I then also wrapped a piece of the reflective stuff around the BT-20 as well. I could then slide this assembly into the clear tube and put the black plastic caps on each end to hold everything together.

I mounted two of the super-bright LEDs to each of the centering rings, facing towards each other and soldered wires to the leads. The wires to the forward LEDs route through the BT-20 tube to the aft end and all of the LEDs are connected in parallel with each other. I turned a balsa nose cone on the lathe to the diameter of the plastic cap. It doesn’t have any shoulder and is attached to the forward cap with screws. I had a standard Estes BT-80 tube in my collection, which is a little larger in diameter than the clear tube. So I also turned a balsa transition with a shoulder. This is attached to the aft plastic cap with screws and the shoulder then slides into the BT-80.

In addition to the LEDs in the clear section, I came up with the idea of also having a light on the inside that would shine upwards under chute and would hopefully illuminate the parachute. To accomplish this, I sacrificed a cheap Harbor Freight aluminum LED flashlight. I cut the head end of the flashlight off and soldered some wires to the connection point for the LEDs. I epoxied that to a plywood plate that I could screw onto the bottom of my transition. I also decided that the flashlight battery pack (3 AAA batteries) would make a good power source for the whole thing. I bored a fairly large hole through the center of the transition piece and the battery pack gets stuffed in there. This also provides a path for the wires from the upper LEDs to come down and connect with the wires from the flashlight LEDs. Finally, I found a small push-on/push-off switch in my junk box and mounted that in the aft plastic cap with the button sticking out. I can now turn the LEDs on and off with the rocket fully assembled.

I finished out the rocket with a standard 24mm motor mount, three swept back fins and a couple 3/16 in launch lugs. I never painted the rocket as I figured it didn’t really matter on a night rocket. The rocket flew several times on D12 motors and was always successful. The LEDs are plenty bright enough to easily see throughout the flight. The idea of the internal light illuminating the parachute was somewhat successful, but not all that spectacular. I had always thought I

would also fly it with an E9 motor, but never tried until this last year. I warned everyone that there was a fair to middling chance of a cato and that warning proved to be justified. It was the last flight of the evening and it ended in a bang. The rocket never left the pad and the booster was blown to smithereens. The force of the explosion, however, was almost completely horizontal and neither the parachute nor the payload was damaged at all. So, I guess I will need to come up with a new booster section before next year. Maybe one with a 29mm motor mount. I do have an F15 I've been wondering what to do with...



*Illustration 1: Side View of lighted payload*



*Illustration 2: End view of LEDs*



*Illustration 3: Lighting up the night*



*Illustration 4: Really lighting the night with a E9 Cato !*



## KRAMO 37 EVENTS



While it might seem a little early to be posting the events for our NAR competitive event it beats waiting till the last minute to throw that eggloft together the day before the meet. Ok, I know some of you are still OK with that. Anyway, here are the events for KRAMO 37 to be held at our Hutchinson field on June 10 and 11. If you've never entered an NAR competition KRAMO is the perfect place to begin. Although we have many experienced competitors the stress level at our events is very low. Come out compete and have fun. If you go to our website [www.kosmo427.org](http://www.kosmo427.org) and click on KRAMO it will take you a list of individual events and by clicking on (rules) you will get a detailed explanation of the rules for that event. Who knows you might pick up a ribbon or two by the end of the weekend or even the traveling trophy or a gift certificate. This event is a classic in Kansas and we want you to be a part of it.

### Contest Events -

**OPEN SPOT LANDING**

**SET DURATION (40 SEC)**

**"C" EGGLOFT DURATION**

**"A" STREAMER DURATION**

**"B" HELICOPTER DURATION**

**"A" ROCKET GLIDER DURATON**

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### CLUB LAUNCH SITES

The parking lot at the State Fair grounds in Hutchinson is our low/mid power field. We do limit flights to Class 1 rockets (which generally means up to a G impulse motor max) that can reasonably be expected to stay within the bounds of the field.

Near Ellinwood, Ks. is our largest and most open launch area, which means that high power rockets are allowed at this event. Launches are held at the Ellinwood Airport or the Lanterman Family Farm. We will file an FAA waiver good to 10,000 ft above ground-level. Generally speaking this will allow up to a K impulse motor. Note that you must be properly certified, or be getting your certification, to fly high power rockets. If you would like to get Level 1 or Level 2 NAR certification, we have members that can help you with that. Please contact us if you have any questions. While high power rockets are allowed at this site, most flights tend to be of low and mid power rockets. So do not hesitate to join us even if you are not in to the high power stuff.

Monthly sport launches have an entry fee of \$3 for members and \$4 for non-members. For our yearly contest, KRAMO, there is a \$1 fee for those sport launching only and a \$7 fee for teams and seniors entering the contest and a \$5 fee for juniors. Maximum fee for a family is \$15.



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## KOSMO 2017 LAUNCH CALENDAR



### **Spring Fest — Saturday, March 4, 2017**

10:00am - 5:00pm

Ellinwood, KS Airport

10,000ft Waiver      BBQ available at Noon (for a small fee)

*Alternative dates: Saturday March 18 and Saturday April 1, 2017*

### **Sport Launch — Saturday, April 15, 2017**

10:00am - 5:00pm

Kansas State Fairgrounds Parking Lot, Hutchinson, KS

- **Sport Launch — Saturday, May 13, 2017**
- 10:00am - 5:00pm
- Kansas State Fairgrounds Parking Lot, Hutchinson, KS

### **KRAMO — Saturday-Sunday, June 10-11, 2017 Hutchinson, Ks.**

### **Sport and 4-H Launch — Saturday, July 8, 2017**

- Rush County Airport, near La Crosse, KS
- 9:00am - 2:00pm

### **Sport Launch — Saturday, August 5, 2017**

- 10:00am - 5:00pm
- Kansas State Fairgrounds Parking Lot, Hutchinson, KS

### **Final Frontier Fun Fly — Saturday, September 16, 2017**

- 10:00am - 5:00pm
  - Ellinwood, KS Airport or Lanterman Farm
  - 10,000ft Waiver      BBQ available at Noon (for a small fee)
- Alternate date in case of bad weather: September 30, 2017*

- **Rocket-tober Fest — Saturday, October 14, 2017**

- 10:00am - 5:00pm
- Ellinwood, KS Airport or Lanterman Farm
- 10,000ft Waiver

*Alternate date in case of bad weather: October 28, 2017*

### **Nightflight — Saturday, November 11, 2017**

- 3:00pm - 7:00pm
- Kansas State Fairgrounds Parking Lot, Hutchinson, KS