



The Flightline



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Newsletter of the Propstoppers RC Club

AMA 1042

May 2005

The Central Limit Theorem

During my long career I had the privilege of working with and learning from some of the brightest minds and skilled technicians. One of them was a PhD statistician. He told me of the Central Limit Theorem. Now since I was not steeped in the sophisticated math of this subject, I had to sort of take a picture of the concept, and here it is;

When you get several opportunities to observe something, and you see the same answer several times, that is the most likely true answer.

"So what" I hear you say, I'll tell you. The club presidents have asked for volunteers to lead the effort to find us a new field at least six times. The answer has been "nobody" every time!

Guess what, it is not going to happen, so let's move on and make the most of the nice field that Dick Seiwel has found for us and the generous offer from Delco RC for the use of their field for our gas flyers.

With time and good relations with our "landlord" I would expect gas helicopter flying to be allowed at CA. and maybe more. With the trees in leaf it is quite well shielded from noise. There is a chance we could be there for a while.

So let's plan a summer of fun at our new field, let's plan the picnic, the fun fly, maybe Scale Day, how about WWII Warbirds foamy combat?

Dave Harding

Editorial: New Field, New Season

The early Spring weather enticed us to the scheduled April 9th Christian Academy Field day, and groundsman Dick Seiwel brought his complement of tractors to tackle the long grass, but the field was still saturated and first Dick Klekotka then Dave Harding sank into the "quicksand" and had to be towed out. The Northern end of the landing strip was also wet and a challenge for the tractors, but Dick and then Ray Wopatek stayed with it until we have a magnificent large strip. Although we made the usual sacrifice of an airplane or two it was not really suitable flying weather so we waited to christen the field over the following weekend when the weather was outstanding.



Sure he is old enough to drive, nervous dad Rick Grothman looks on while son Paul drives Dick Seiwel's tractor

It's ready to go folks, get out and try it. Some members are already asking which evenings we should establish as regular flying sessions. Anyone care to make the declaration? Thursday's still good, anyone want to lay claim to another?

Dave Harding

Agenda for May 3rd Meeting
Marple Newtown Library, 7:30 pm

- ?? Approval of April meeting minutes
- ?? Membership Report
- ?? Finance Report
- ?? Flying Field Issues
- ?? Club Event Plans
- ?? Show and Tell

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Calendar of Events

Club Meetings

Regular Meeting 7:30 pm
Tuesday 3rd May 2005
Marple Newtown Library

Tuesday Breakfast Meeting
The Country Deli, Rt. 352 Glenn Mills
9 till 10 am. Just show up.
Flying afterwards, weather permitting

Events

Sunday 15th May, Silent Knights Soaring
Society of Delaware, electric and glider fun
fly. www.skss.org for details. Great field
easy drive for us.

Tuesday 10th May, 5:30 pm
Lehigh University Student's MAV
American Helicopter Society/SAE dinner
meeting at the Towne House, Media. See
Dave Harding or Dave Bevan

Regular Club Flying

At Christian Academy
Weekdays after school; 3pm till dusk
Saturday 10 am till dusk
Sunday, after Church; 12 pm till dusk

Note; Flying must be done in accordance
with the agreement forged by Vice President Dick
Seiwell Specifically, only electric powered airplanes.
Beginners using due caution and respecting club
rules mav flv GWS Slow Stick without instructors.

Propstoppers RC Club of Delaware County, Pennsylvania. Club Officers

President Steve Boyajian
(610)-399-6709 shlmmail@yahoo.com

Vice President Dick Seiwell
(610) 566-2698 reslawns@verizon.net

Secretary Richard Bartkowski
(610) 566-3950 rbartkowski@comcast.net

Treasurer Jim Barrow
(610)-430-3856 jbarrow@comcast.net

Membership Chairman Ray Wopatek
(610) 626-0732 raywop@juno.com

Field Marshall Al Tamburro kaosal@webtv.net
(610) 353-0556

Newsletter Editor Dave Harding
(610)-872-1457 davejean1@comcast.net

Webmaster Bob Kuhn
(610) 361-0999 kuhnrf1606@kuhnfamilv.com

Propstoppers Web Site; www.propstoppers.org
Check the web site for back issues of the
newsletter, pictures of club events and the calendar
of future events.

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use but shall not be reproduced for sale.*

Minutes of the Propstoppers Monthly Meeting April 5th, 2005 at the Marple Newtown library

Vice-president Dick Seiwell called the meeting to order at 7:40
p.m.

A roll call by membership chair Ray Wopatek showed 34
members present

Minutes of the March meeting as published were moved and
accepted by the membership

The treasurer's report by Jim Barrow was presented

Old Business:

The club discussed several field sites. The Delco club field in
New Jersey appears to be a good location for all models and is available
for our club to share.

New Business:

We will have a field maintenance day on Saturday April 9th at
the Christian Academy site. The group will lay out the runway and begin
mowing. Dick Seiwell also discussed the use of Chester Park as a flying
site. It appears to be open for model use.

The club president asked for a volunteer to provide coffee
refreshments at the meetings, beginning in the fall.

Show and Tell:

Rich Klekotka showed a Great Planes Tutor electric built up
with a seven-cell nickel metal hydride pack. He is awaiting the flying
season to get it in the air.

*Dick Klekotka with his
Great Planes Tutor*



Sam Nevins showed a kit built 40-powered ultimate biplane that he just completed. It came in at five and a half pounds all up weight.

Sam Nevins' plane of the month; an Uimate bipe.



Al Tamburro showed an OS Max 61 geared motor made to turn a large 16 to 20 in. prop. He said very few such geared glow engines were ever made.

Al Tamburro with his rare ST geared motor.



John Tullai showed a sky Robo helicopter.



It has two sets of blades in a counter rotating arrangement and is powered by small lithium battery.



He flew it in the hall for our enjoyment.

John Tullai demonstrates his new Robo helicopter; magic!

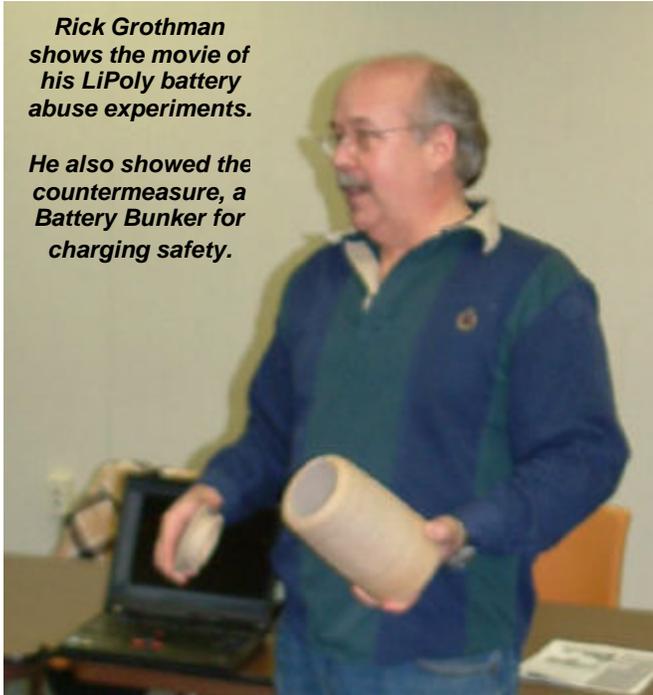


The Foamy 3D Revolution

Rick Grothman showed a pottery battery container for charging lithium cells in a safe manner. He showed a video of some packs that had ignited.

Rick Grothman shows the movie of his LiPoly battery abuse experiments.

He also showed the countermeasure, a Battery Bunker for charging safety.



The meeting was adjourned at 8:50 p.m.

Richard Bartkowski, Secretary

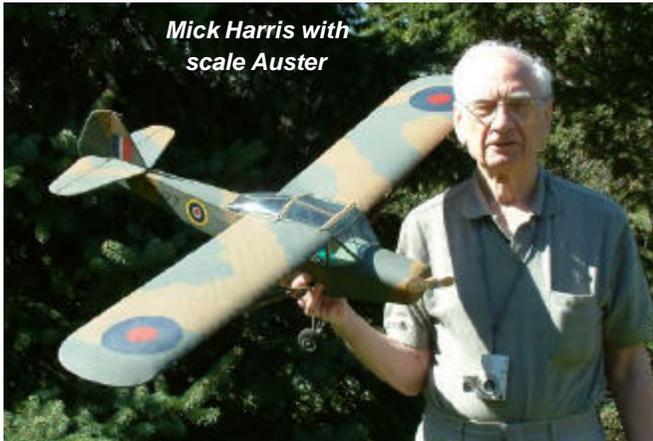


A Scale Day at the Propstoppers?

Mick Harris has turned his prodigious building regimen to the scale world. With a little encouragement from your editor, Mick has been persuaded that the occasional foray to the region's various "Warbirds Over XX" meets would be fun, so he is in the process of building no less than four or five IMAA size electric powered scale planes.

How about we declare one of our summer dates as a club Scale Fun Fly? Almost everyone has some kind of scale ship that could be prepared given enough notice. How about it? We should discuss it at the next club meeting.

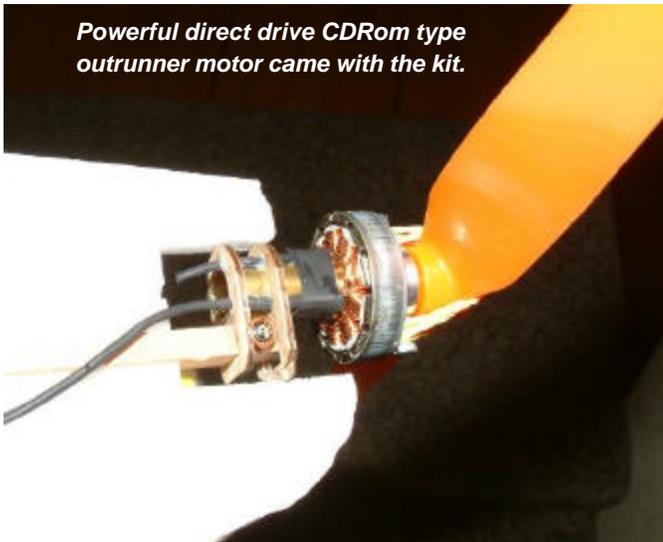
Mick Harris with scale Auster



Your editor planned to do some more indoor flying during a mid winter visit to mum in Jolly Olde England, but what to fly? I had seen a new foamy 3 D "kit" advertised on the web and one of the attractions was the extremely flat packaging. So I sent in my order and to make it simple I ordered the complete kit with motor, speed control, servos and a Li Poly battery.

As things turned out I did not get the opportunity to ether build it nor attend a meet. So, with one more Tincum indoor meet on the slate I put it together in a couple of evenings, leaving only the control hookup to the afternoon of the meet. Well, I was too optimistic as I found I needed to splice an additional length to the speed control receiver harness (don't ask why) and I just plain ran out of time. So the first chance to fly was at our recent visit to the Delco RC field.





Powerful direct drive CDRom type outrunner motor came with the kit.

Fortunately they had their resident 3D flyer in attendance so I asked him to make the first flight. I offered him the low rate setting but he declined! Like all flyers of this ilk he was in a hover as fast as you can say floamy 3D. Switching to low rates he declared it a pussycat and handed me the box. Well, it was a bit of a handful and with such a small model and a little wind; it quickly flew some distance from me. Although I had marked the lower left hand wing with distinctive "invasion stripes" it became difficult to determine the orientation, so my initial attempt made a gentle landing..... In a tree. Not to worry, I am used to this and one of the Delco RC guys just loves to climb, so no harm done.

The next opportunity to fly was at our CA Field weekend where "Mr. Morris the Knife", Al Tamburro, did the honors. He was elated that this model seemed to do so much, but it was a handful under certain flight conditions, particularly at higher speeds. But hover? You bet!

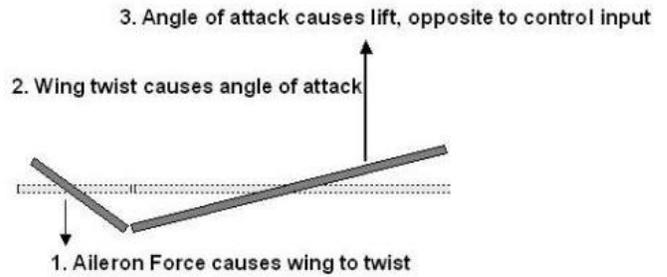
Careful examination of the flight behavior indicated that the oversized ailerons were twisting the wings in an adverse direction; see below.



Big ailerons, torsionally flexible wing; big trouble.

This adverse wing twisting is a common concern in airplane design, both because of control effectiveness reduction and flutter. It is caused by the aileron force acting at the trailing edge producing a twisting moment on the wing. In the extreme, the effect is a complete control reversal; the intended

downward force is transformed to an upward force from the wing incidence increase.



In the case of the slick this effect was severe and was actually recognized by the manufacturer since a fix is shown on their web page. However, we were at the field having fun, so what to do? In WWI they solved this problem through bracing the wings, and stabs with flying and landing wires towards the leading and trailing edges. Well, we didn't have any string so we used scotch tape, or at least we did for three quarters of the fix but we ran out of tape, so we finished the job with electrical tape. Naturally, it worked just fine and Al had a ball with it. "Just like Morris the Knife" said Al, "I must have the design." "I could bash out one of these in an evening" And so he could, as these things are absolutely simple.



Wing torsional stiffness field fix.

The wings and stab are made from flat 1/8 inch Depron sheet. What Dick Bartkowski calls meat plate material. The fuselage is from 1/4 inch sheet. There are minimal carbon strip braces at the wing leading and trailing edges but the manufacturer recommends addition of carbon rod "flying wires" and I will fix them before the next flight.

What is truly magic about these airplanes is that they fly very well and you could use the basic approach to make almost any airplane in this scale. The key is that the structure and propulsion are in complete harmony with respect to performance, maneuverability and strength.

We could make a fleet of these things to look just like Warbirds, and Al is right, you could build one in an evening. What do you think? WWII combat in the Fall?

Dave Harding



🔧 **SLICK 3d & Sport Aerobatic Parkflyer**

Ready-to-fly in 2-3 hours!

****American Made****



Aerobatic Parkflyer

SLICK is not your "typical" foamy. Constructed from carbon-reinforced Depron, she flies with dazzling performance! Engineered and sized to be perfectly matched with the new breed of rewind brushless [CD-ROM motors](#), *SLICK* will captivate you with her remarkable performance and durability!

Specifications:

- ?? Wing Span: 27" / Length: 27"
- ?? Wing Area: 203 sq in
- ?? Flying Weight: 4.5 to 6.0 ounces
- ?? [Motors](#): CD-ROM, PJS-300, IPS, Feigao
- ?? [Servos](#): Any 4 to 6 gram, 3 required
- ?? [ESC](#): Pixie-7P or equivalent (brushed motors), Phoenix-10 or equivalent (brushless motors)
- ?? 4 Channel Receiver: Any 4 to 9 gram
- ?? [Battery](#): Lithium Polymer 0.7 to 1.3 ounce. Examples: 340-2S, 450-2S, 700-2S. Should be capable of 4+ amps continuous discharge

Kit Features:

- ?? ***Builds ready-to-fly in less than 2 hours.***
- ?? Ultra light, strength-engineered design for spot on 3D and sport-aerobatic performance.
- ?? Laser-cut 6mm depron fuselage. Hand-cut 3mm depron flight surfaces.
- ?? Laser-cut plywood control horns.
- ?? All control surfaces beveled for hinging.
- ?? IPS-size motor stick.
- ?? Custom letter graphics.
- ?? Detailed Instruction Manual.
- ?? Flexible brushed and brushless power options.
- ?? Requires only 3 sub-micro servos & no extensions.

- ?? Wing & stab slots are pre-cut in fuselage, as are servo and motor mount openings.
- ?? Assembles like a dimestore glider of yesteryear.



What Else Do I Need?

Sub-Micro Servos (3)

Any 4 to 6 gram servo will work well. Weight is important. GWS Pico servos fit cutouts precisely.

ESC (Electronic Speed Control)

Castle Creations Pixie-7 programmable ESC for brushed motors and the Phoenix-10 for brushless motors offer a user-programmable cut-off voltage designed to protect your LiPoly battery from being over-discharged.

Motor

SLICK was designed specifically for the new breed of inexpensive brushless [CD-ROM motors](#). Exceptionally small and light-weight, these motors provide better than 2-to-1 thrust-to-weight without a gear box. Since *SLICK* uses the standard IPS-size motor stick, many power options will work well, including the GWS IPS-DXA on 2-cells or IPS-DXC on 3-cells. Keep the power unit under 30 grams for best results.

LiPoly Battery & Charger

Lithium Polymer batteries should be used to power your *SLICK*. Match your battery with the current requirements of your motor, and keep it light-weight. Our 340-2S, 450-2S, and 700-2S lipoly batteries are excellent choices. Expect 11-minute flights on the 450-2S and 24-minutes on the 700-2S, doing all-out aerobatics the whole flight.

Finishing

We use permanent marker pens for a visible and light-weight color. Let your imagination run wild!

Model Airplane Engineering
<http://www.m-a-e.com/>

Rich Bourassa's Harbor Freight Conversion

Rich Bourassa's Harbor Freight RC conversion in process.

Six-inch rule for comparison shows how small this model is.

Pile of discarded parts on bottom left.



It's Harbor Freight sale time again and among this month's goodies are sales on their popular freeflight electric planes. They are on sale for half price at about \$7.00; there are actually about 3 or 4 different models to choose from. There is a 6-inch scale to relate size.

I decided to make an RC conversion. On the lower left hand corner you can see a pile of junk and other not-needed parts. I decided to use a smaller more efficient motor, which should run great with the E tech 7.4 V 250 mha LiPo.

You can also see I have already modified the rudder and stab, figuring to try it first with rudder and elevator. If it flies nice he may add aileron function for a full house set up.

23" wingspan

17" length

Motor - GWS N-20

Servos - Cirrus 5.4

Speed control - Pixie 7P

Receiver - GWS or new Blue Arrow

Battery - E-tech 7.4 V 250 mah LiPo

Rich Bourassa



Safety in ARF's

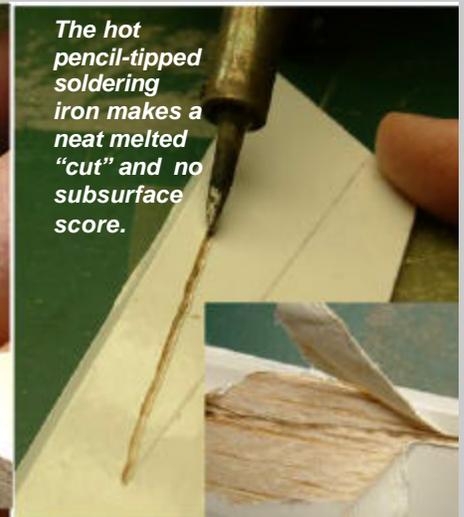
I am sure by now that every active member of our club has faced this problem. The manual, if there is one, tells you to remove the covering in the region that the stab must be glued to the fuselage, or the fin is glued to the stab. Of course, this is a crucial part of the assembly.

Most experienced modelers recognize this as a key structural joint, but how do we remove the covering? Usually with a sharp knife, and with the heavy film covering (can you say linoleum?) used in most models this is no easy feat. You must cut cleanly through the film without scoring the balsa structure beneath it; yeah right! Ok, fess up, how many of you worry about the depth of the score in the critical upper or lower surface of the horizontal stab, or in the worst case, both surfaces? A tip in a British magazine seems like the ideal solution; use a pencil-tip soldering iron to remove the film. Should be neat and easy, and has the side benefit of securing the film at the cut edge. Try it and let us know if it is really the way to go.

The dreaded sharp knife and the resulting score damage

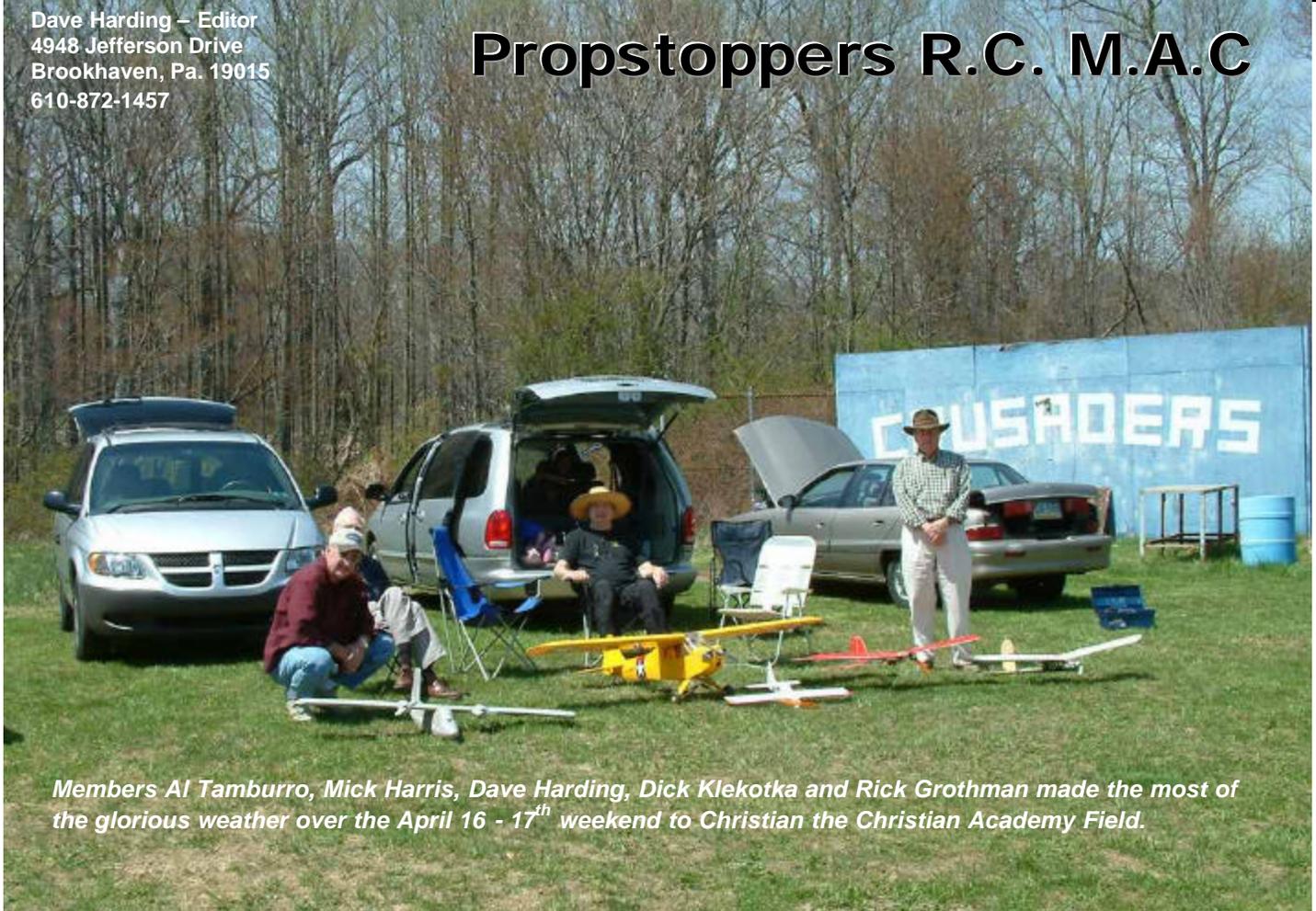


The hot pencil-tipped soldering iron makes a neat melted "cut" and no subsurface score.



Dave Harding – Editor
4948 Jefferson Drive
Brookhaven, Pa. 19015
610-872-1457

Propstoppers R.C. M.A.C



Members Al Tamburro, Mick Harris, Dave Harding, Dick Klekotka and Rick Grothman made the most of the glorious weather over the April 16 - 17th weekend to Christian the Christian Academy Field.

