

the

Ampeer

April		The EFO Officers		2021	
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No Mailed Ampeer Subscriptions		The Next EFO Meeting: Wed., April 14, 7:30 p.m., Zoom (details emailed to members)			

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A Flite Test 35A ESC Conundrum, Or WAS IT?

<https://store.flitetest.com/flite-test-ft-35a-esc-w-xt60-connector-flt-3038/p846364>
By Ken Myers

During the 2019/2020 building season here in southeastern lower Michigan, I spent most of my time getting ready to release the plans and instructions for MY modified version of the Flite Test (FT) Simple Cub.

While finalizing this version, I built two more complete airframes, which I now call version 5. One of the version fives was built as a 3-channel, with rudder, elevator, and throttle control and the other version five was built as a 4-channel with ailerons, rudder, elevator, and throttle.

I had the power system and RC system components on hand to complete one airframe.

Even though I had a horrible experience with the FT power system components purchased for the Old Fogey, I decided to give FT another chance.

Information about the FT motor and ESC I tried to use in the Old Fogey, including tests and comparisons, are in the

July 2016 *Ampeer*. It was not a positive experience.

<http://theampeer.org/ampeer/ampjul16/ampjul16.htm#FOGEY>

On March 29, 2020, I ordered a Power Pack B from the the FT Store, which is now run by Amain Hobbies.

There is information in the September 2018 *Ampeer* where I note that Amain Hobbies is the company that now provides all of the Flite Test branded items and provides the technical support for Flite Test.

<http://theampeer.org/ampeer/ampsep18/ampsep18.htm#FT>

The Flite Test Power Pack B "Radial Edition" is the power pack recommended for the Flite Test Simple Cub Electric Airplane Kit (956mm) - Maker Foam.

Simple Cub

<https://store.flitetest.com/flite-test-simple-cub-electric-airplane-kit-956mm-flt-1072/p1194444>

Parts:

<https://store.flitetest.com/flite-test-simple-cub-maker-foam-electric-airplane-kit-956mm-flt-1072/p1194444>

Power Pack B Radial Edition:

<https://store.flitetest.com/flite-test-power-pack-b-radial-edition-flt-3059/p983485>

Power Pack B “Radial Edition” contains the Flite Test FT 35A ESC w/XT-60 Connector. The price on March 10, 2021 was \$25.99, if bought separately.

<https://store.flitetest.com/flite-test-ft-35a-esc-w-xt60-connector-flt-3038/p846364>

Specifications:

Continuous Current: 35A

Burst Current (10s): 40A

Input Voltage: 7.4-14.8

Dimensions: 52x26x7

Weight: 28g

BEC Output: 3A @ 5V (*This unit has a linear BEC, not switching BEC. KM*)

As of March 10, 2021, FT had not posted any instructions or manual on their Website for this ESC. No instructions were packed in the Power Pack B box, nor were any instructions, or manual, provided with the individually purchased ESC.

Programming information appears to be unavailable. I made two requests to FliteTest/Amain for information regarding the original equipment manufacturer (OEM) so that I could get the programming instructions. I never received a reply from either inquiry.

I received my FT Power Pack B on Saturday, April 4.

I replaced the supplied XT-60 connectors with Anderson Power Poles (APP) on the two Tattu 3S 1300mAh LiPo batteries, which were purchased at the same time as the FT Power Pack B. The XT-60 connector on the FT 35A ESC was also changed APPs.

I set up the power system components on the workbench. The components included the FT 35A ESC, FT Flite Test "Radial" 2212B 1050kV Brushless Motor, a Tattu 3S 45C LiPo Battery (11.1V/1300mAh) (JST-XH), a FT ES08AII 9g Servo and a Tactic TR625 receiver linked to my main Tactic TTX650.

There was no prop on the motor, as I only wanted to check to see that everything was working.

I plugged in the Tattu 3S LiPo and the servo “jumped” a bit, and there was a tone, but there was not a second set of “tones” indicating that the ESC had armed. The servo moved when I moved the

stick on the transmitter, but there was no response from the throttle.

A visual double check showed the lead from the ESC to the throttle channel on the receiver was in the correct slot of the receiver to control the throttle.

I opened a brand new Cobra 33A ESC with 3A Switching BEC.

<https://innov8tivedesigns.com/cobra-33a-esc-with-3a-switching-bec.html>

Price on March 10, 2021 - \$26.99

I replaced the FT ESC with the Cobra ESC.

When the battery was hooked up to the Cobra ESC, the servo “jumped” and “tones” were heard indicating that the motor was armed. I quickly blipped the throttle channel and that showed that the new Cobra ESC was working as expected.

The FT ESC was tried with a Cobra C-2217/20 Brushless Motor that I had on hand. Once again, the servo worked, indicating that the BEC was working, but no arming “tones” were heard and the motor did not respond to the throttle.

I tried to call Flite Test on Sunday, to see if I could get some help trouble shooting, but found that they were closed.

I tried again on Monday, but no one answered the phone, so I tried the chat option.

In chat, on Monday, I found myself “chatting” with a person at Amain Hobbies, who handed me off to another individual who gave me a phone number to call to speak with him.

We talked on the phone and I told him what I’d done to check the ESC. They decided to just send me a new FT 35A ESC.

It shipped from Amain on Tuesday, April 6 and I received it on Monday, April 13.

Because of my home schooling obligation, I didn’t get to try the replacement until the following weekend. There was no joy when I tried it. I found that the replacement ESC showed the same behavior as the ESC that came in Power Pack B.

I’ve owned many brands of brushed and brushless ESCs over the years, but I have never owned one that needed something special done with the transmitter to arm the ESC, but I thought that I had heard of them.

I was also aware that some ESCs needed to have the throttle range calibrated and the procedure that was usually required to do that.

With everything, including the new FT 35A ESC, set up on the bench, with no prop on the motor, I turned on the transmitter and moved the throttle stick to full on. I plugged in the battery, but no arming tones were heard. Once again, the BEC was providing power to the servo.

Next, I disconnected the Tattu 3S LiPo and moved the throttle stick to full off. The battery was plugged in again. The servo worked but no “tones” were heard indicating that the throttle was armed.

The throttle was opened to full, left for a few seconds, brought back to closed for a few seconds and then opened to full again. Tones were heard. The throttle was brought back to the closed position and “tones” were heard again. The throttle now spun up the motor.

I repeated this process several times, and it worked each time.

The following day I got ready to do some power system testing. The motor was mounted in one of the new version five Simple Cubs. The battery was charged and the Emeter II was put in line to record amps, volts and RPM.

I tried to arm the ESC using the procedure I had used on the previous day. No matter what I did it did not work!

I was NOT happy. I discharged the power battery and went upstairs in a “funk” on Sunday, April 19.

I'd pretty much decided to just go ahead and order a new Cobra 33A ESC from Innov8tive Designs and call it a lesson learned.

I continued to search the Internet for any information on arming various ESCs. On the morning of April 22, I found a video on YouTube called “Your ESC Won't Arm ? Motor Won't Run ? Try This ...!!! For Dave”.

<https://youtu.be/ce81bDdOn0M?t=34>

I tried the method, demonstrated in the video, and I could get the ESC to arm by lowering the trim. Unfortunately, the lowering had to be done every time that the battery was attached, which was a pain, and there was no consistency as to when the

ESC would arm, and the throttle trim could not be left there to arm again.

On April 23, I continued to work on finishing up the 3-ch version 5, in which the FT 35A ESC and FT motor were to reside.

The throttle trim on the Tactic TTX650 transmitter had been left at its center position from the previous day of trying to figure out the arming sequence.

I plugged the Tattu 3S LiPo in to check the angle of the surface throws for the rudder and elevator. I didn't care whether or not the ESC armed at this time, as I just needed to use the BEC to power the rudder and elevator servos.

Much to my surprise, when I plugged in the battery, the ESC's arming tones were heard and the throttle worked. What?

On Saturday, April 26, I wanted to finally test the power system combination of the FT ESC and FT motor. I got a 3S LiPo from its “safe” place. I turned on the transmitter and verified that the throttle trim was centered. The prop was removed. I plugged in the LiPo battery and the ESC did not arm. What?

When I tried lowering the throttle trim, which had worked before to arm the ESC, I discovered that the the throttle trim “lever” on my main Tactic TTX650 was not working well. I got the throttle trim to finally start moving down, but the ESC would not arm! What?

It appears that my throttle trim “lever” has now failed on my main TTX650, as I cannot lower the setting with the throttle trim lever.

I got out my second, backup, Tactic TTX650 and linked it to the receiver. I turned on the backup TTX650, with the throttle trim centered, and then plugged in the power battery. The ESC armed.

I tried the backup TTX650 again and again and it armed each time. It appeared that I was able to calibrate the throttle as well, as the tones played as expected.

Next I tried a FlySky i6X and its companion FlySky IA6B receiver. The FT 35A ESC armed each time I tried it. I was also able to calibrate the throttle as well.

A Jumper T16 transmitter was bound to a FrSky X8R receiver and then tried. The ESC armed each

time I tried it. I was also able to calibrate the throttle as well.

Again, I tried the backup TTX650 linked to the same TR625 receiver. With the trim centered, it armed each time I tried it. I was also able to calibrate the throttle as well.

I was very surprised that the “arming” problem was because of the transmitter, not the ESC.

The first Tactic TTX650 that I tried, which is/was my main transmitter, had worked over many years, arming many different ESCs through many different Tactic receivers, with no problems.

It appears to be just a coincidence that my transmitter developed a problem with the throttle trim when I tried to use it with the FT 35A ESC. Who'd a thought?

AND HERE IS THE BIG TAKE AWAY!

I learned that there is one more step required when checking out ESCs that don't seem to be working, check it with different transmitters, even if the transmitters are “identical”, and also try other radio system brands.

Resources that I used:

FT arming problem solution:

<https://youtu.be/ce81bDdOn0M?t=34>

Emax ESC instructions which I named “emax-instruction-linear-BECs.pdf”. But it also has their instructions for their switching BECs which they call UBECs. emax-instruction-linear-BECs.pdf

Amain in Ampeer

<http://theampeer.org/ampeer/ampsep18/ampsep18.htm#FT>

Old Fogey motor ESC tests in *Ampeer*

<http://theampeer.org/ampeer/ampjul16/ampjul16.htm#FOGEY>

Here is a listing of MY preferred components for the FT Simple Cub.

Cobra C-2217/20 Brushless Motor, Kv=960

<https://innov8tivedesigns.com/cobra-c-2217-20-brushless-motor-kv-960.html>

Price on May 1, 2020 \$30.99

Note: One of these is still installed in the red and yellow EconoKote covered version 4 that I am still flying.

Cobra C-2213/26 Brushless Motor, Kv=950

<https://innov8tivedesigns.com/cobra-c-2213-26-brushless-motor-kv-950.htm>

Price on May 1, 2020 \$28.99

Note: I had recommended this motor to others, which they used successfully. It is the motor that is now installed in the aileron version 5.

Cobra 33A ESC with 3A Switching BEC

<https://innov8tivedesigns.com/cobra-33a-esc-with-3a-switching-bec.html>

Price on May 1, 2020 \$26.99

Note: I like this small ESC because it has a switching battery eliminator circuit (SBEC). It also has a programming card available, which is easy to use and inexpensive.

Cobra ESC Programming Card

<https://innov8tivedesigns.com/cobra-esc-programming-card.html>

Price on May 1, 2020 \$6.99

HS-53 Sub-Micro Analog Feather Servo (HRC31053S)

<https://www.horizonhobby.com/hs-53-budget-feather-servo-hrc31053s>

Price on May 1, 2020 \$10.99

Tactic TR625 FHSS 6-Channel SLT

Receiver (TACL0625)

<https://www.horizonhobby.com/tr625-6-channel-slt-receiver--twin-antennas-p-tacl0625>

Price on May 1, 2020 \$24.99

The March 10, 2021 EFO Zoom Meeting

Eight EFO members attended the EFO monthly meeting on Zoom on Wednesday, March 10., 2021.

Keith Shaw, Jim Young and Roger Wilfong flew at the Legacy Center, in Brighton, that afternoon. The sessions there are going very well.

Unfortunately, there was a bit of a mid-air with Keith's Deperdussin and a small drone that got caught in the Deperdussin's rigging.



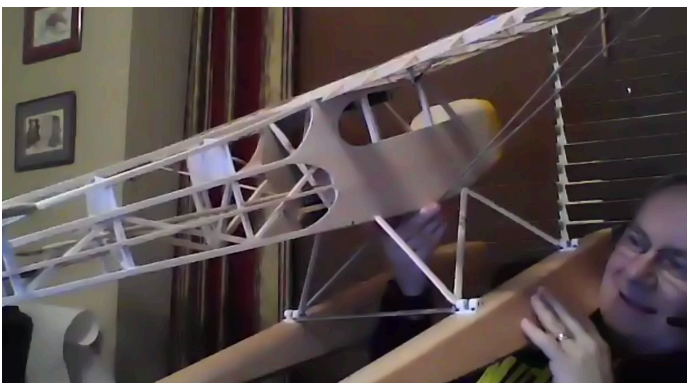
Keith with his Deperdussin in March of 2018

Keith is also teaching a young fellow, about 8-years-old, to fly at the Legacy Center. The young man is doing quite well and starting to fly on own without the stabilization of his Vapor on.



Roger Wilfong flew his new, flat RC plane known as the Flip-Flop by Fancy Foam.
https://fancyfoam-com.3dcartstores.com/Flip-Flop_p_99.html

Jim Young flew his 20" span, 1/12-scale, Mike racing plane. The plane was designed by Jim, and Keith helped him work out the final flying trim.



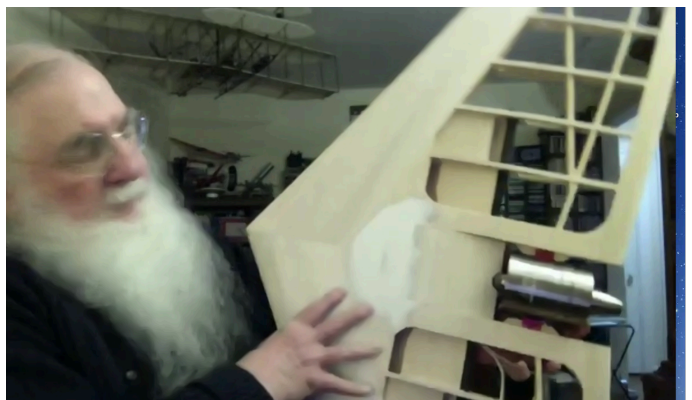
Jim has also been working on a new version of his self-designed cub. The original flew at one of the earliest Mid-Ams. He recently glassed the floats. The float setup allows for an easy change between the floats and the conventional landing gear.

Keith Shaw discussed the development and design of his new, pure, flying wing. At this time he is calling it the Sting Ray.



The plane will be using a very different kind of of ducted fan assembly. It is called the Mercury 74mm fan. Keith had seen the prototype at Toledo a few years ago. He purchased his from Aloft Hobbies. It will use a 6S LiPo with under a 70A maximum draw.

Note from Ken: When I looked on the Aloft Hobbies Website, it notes that the unit is no longer available. There is still a photo there of a similar unit called a Typhoon.



The diagonal spars, shown in the photo, provide for torsional strength and rigidity.

For wheel-well liners for the retracts, he uses coffee cup sleeving.

At this time, he is guessing at an all-up flying weight under 5.5 lb.

Bob Blau noted that he did fly a couple of outdoor flights the previous week during a spat of nice weather, although it did get windy. He said that it was really nice to get out for a few flights.

Ken asked if the hobby shops in the area are open. He was told that they are open and that people seem to be using them.

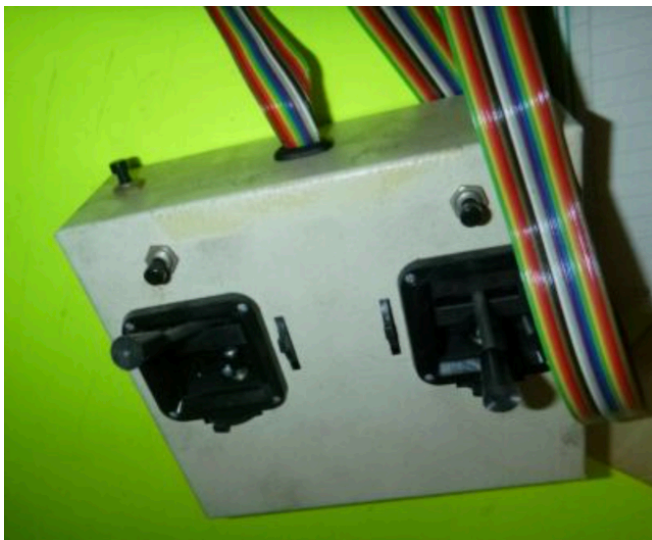
Jim Young noted that his LiPos are getting a bit old and tired and asked about replacing them with A123 packs. Both Keith and Ken said that should be workable for the planes he wants to use them in and that it might be a good idea.

Ken said that the Midwest RC Society has plans well underway to construct a charging station at their flying field. This could be a 'benefit' for the EFO members who regularly fly there.

The topic of RC Flight Simulators came up. Keith remembered one that gave a dollar value for repair of a crash.

Ken said that he had one for the Apple IIe. It was the Dave Brown one and it had crash value. He also remembered that the program came on a 5.25" floppy disk and that the plane was presented as a wire-line drawing on the green screen of the monitor.

Addendum:



After the meeting, Ken found the control box on e-bay.



He also found the year. According to the Dave Brown biography in the AMA Hall of Fame, it was noted "1985: Introduced the first RC flight simulator at the WRAM Show".

The meeting closed with a discussion of those members who'd received their first COVID-19 vaccinations, and those who were about to get them.

The April EFO meeting will once again be on Zoom on Wednesday, April 14, 2021.

Toledo RC Swap Meet From Joe Hass via email

toledo RC swap meet
<https://toledorcswapmeet.com/>

APRIL 9 & 10, 2021

9:00 am - 5:00 pm FRIDAY

9:00 am - 11:30 am SATURDAY

SeaGate Convention Centre - Main Floor

THE FIRST OF MANY SHOWS TO COME!

Featuring door prizes every hour with an auction on Saturday at noon!

Be sure to keep checking this site for news and additions to the show!

<https://toledorcswapmeet.com/>

This show is for any hobby! RC planes, cars, boats, helicopters, trains, and more!

All necessary COVID-19 precautions will be taken, and the show will go on unless Ohio shuts us down!

GENERAL ADMISSION

Tickets will be sold at the door.

There will be no ticket sales in advance for general admission.

Admission is \$10.00

Women and children are FREE

VENUE

SeaGate Convention Centre - Main Floor
401 Jefferson Ave, Toledo, OH 43604

Admission is \$10.00

Women and children are FREE

Floor plan will be built as reservations for tables come in. We will contact vendors with preferences. The floor plan will be made in compliance with state of Ohio regulations due to COVID-19.

VENDORS

Vendors can reserve 8' tables at \$25.00 per day. If the show is cancelled due to COVID-19, a full refund will be given.

All efforts to table location will be done on a first come first serve basis and in conformity with COVID restrictions.

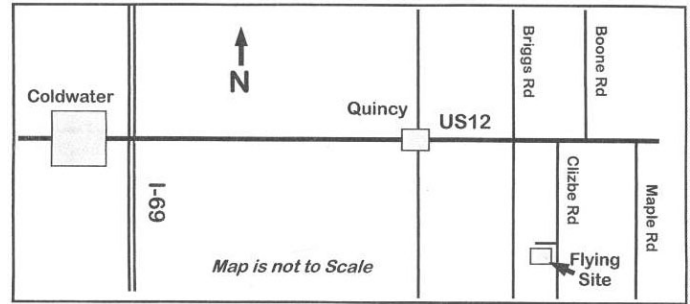
Interest is high! Table sales are going well, so get your reservation in! We can accommodate as many tables as we can sell and fit in the main floor with ample spacing according to Ohio COVID restrictions.

Show put on by www.toledorcswapmeet.com
LLC · © 2020

IMPORTANT! Read Carefully!

*This is **NOT** the former Toledo RC Expo put on by the Toledo Weak Signals. It is a swap meet only. To the best of my knowledge, there is NO connection between the Weak Signals and this swap meet and the group, or individual, presenting this swap meet, although the dates are similar to the former Weak Signals' Toledo RC Expo.*

It notes on the Website that the checks, for tables, are to be sent to Pittsburg, PA. KM



The Upcoming Keith Shaw Birthday Party Electric Fly-in 2021

The Balsa Butchers are hosting the "Keith Shaw Birthday Party Electric Fly-In", for the 19th year, at their field near Coldwater, MI. The event takes place on Saturday, **May 29, 2021**. It is a one day event again this year.

The event consists of Open Electric Flying with a "Special Guest of Honor Theme", Happy Birthday Keith Shaw [June 6].

Enjoy a day with the "Pioneering Master of Electric R/C Flight". 8 a.m. - 4 p.m., Saturday. NO LANDING FEE! Donations for field maintenance and lunch appreciated.

For additional information contact;
Contest Director: Dave Grife - E-mail:
grifesd@yahoo.com or Phone: 517-279-8445
Please e-mail or call with any questions.

The field will be open for guests to fly on Sunday as well.

37th Annual Mid-America Electric Flies 2021

AMA Sanctioned Event (Proof of AMA/MAAC membership required to fly)

Saturday, July 10 & Sunday, July 11, 2021

Hosted by the:

Ann Arbor Falcons and Electric Flyers Only

The 7 Mile Rd. Flying Site, Salem Twp., MI, is

Provided by the:

Midwest R/C Society

Contest Directors are:

Ken Myers phone (248) 669-8124 or email

kmyersefo@mac.org – <http://www.theampeer.org>

for updates & info

Keith Shaw (734) 973-6309

Flying both days is at the Midwest R/C Society

Flying Field - 7 Mile Rd., Salem Twp., MI

Registration: 9 A.M. **Saturday**

Event Flying from 10 A.M. to 4 P.M. Saturday

Open Flying 10 A.M. Until You Leave Sunday

(Open Flying Saturday after the Event & All Day Sunday)

No Pilot Landing Fee

No Parking Donation Will Be Requested from Spectators

Awards on Saturday Only!

Best Scale

Most Beautiful

Best Mini-Electric

Best Multi-motor

Best Sport Plane

Foam Flurry for NCM aircraft

CDs' Choice

Planes Must Fly To Be Considered for Any Award Plaques for winner in each category

The Field is Open for Open Flying All Day Friday Night Flying Possible, Weather Permitting, Friday & Saturday Nights

POSSIBLE Field Lunch (hot dogs, chips, water or pop) Available on Saturday - depends on COVID protocols

POSSIBLE Burgers, Brats and Potluck on Saturday evening for Pilots & Their Guests - depends on COVID protocols

Come and join us for two days of fun and relaxed electric flying.

The NCM (Not Conventional Materials) Event

Traditionally, model aircraft airframes have been mostly constructed from balsa wood, plywood, spruce, and fiberglass. For the purposes of this meet, NCM airframes are mostly constructed from not conventional materials i.e.; sheet foam, foam board, cardboard, block foam, foam insulation material, etc.

Foam Flurry for NCM aircraft: This is a true event. It is based upon the all up/last down event of early electric meets. Any NCM aircraft may be used (no ARF types). Power systems are limited to a maximum of 3S (no paralleling) LiPo batteries or 4S maximum, no paralleling, for A123 packs. All planes qualifying for this event will launch at the same time, and the last one to land will be declared the winner.



VERY IMPORTANT REMINDER FOR 2021 - THE FLYING FIELD ENTRANCE TO THE MIDWEST FLYING FIELD CHANGED TWO YEARS AGO!

The old entrance to the Midwest RC Society flying field is **permanently closed!!! DO NOT ATTEMPT TO USE IT!!!**

To locate the Midwest R/C Society 7 Mile Rd. flying field, site of the Mid-America Electric Flies, look near top left corner of the map, where the star marks the spot, near Seven Mile Road and Currie Rd.

The field entrance is on the north side of Seven Mile Road about 1.5 Miles west of Currie Rd. entrance is on the north side of Seven Mile Road about 1.6 Miles west of Currie Rd.

The address is 7621 Seven Mile Road, Northville, MI 48167. The entrance is through a private residence drive and out past the barn.



Directions from Google Maps to the flying field

<https://www.google.com/maps/place/MIDWEST+R%2FC+SOCIETY/@42.422025,-83.6170775,805m/data=!3m1!1e3!4m13!1m7!3m6!1s0x8823559bdf962b57:0xd100df97d9dcebf1!2s7419+7+Mile+Rd,+Northville,+MI+48167!3b1!8m2!3d42.4187058!4d-83.6190072!3m4!1s0x882355a2c9e29cb5:0xaaaf592068692b984!8m2!3d42.422025!4d-83.6148888?hl=en>

Because of their convenient location and the easy drive to the flying field, the Comfort Suites and Holiday Inn Express in Wixom, MI have been added to the hotels' listing. They are only 10 miles northeast of the field and located near I-96 and Wixom Road. See the map-hotel .pdf for more details.

<http://www.theampeer.org/map-hotels.pdf>

Upcoming E-vents

Legacy Center, Brighton, MI, Indoor Flying
Wednesdays from October 14 through March 31,
 from 12:30-2:30.

**Ultimate Soccer Arenas, Pontiac, MI, Indoor
 RC Flying**

Tuesdays starting Oct. 27 thru April 13, 2021

Hours: 10 a.m. - 1 p.m.

\$10 for a single session, discounted 5 session &
 season passes are available. Dates and Times are
 subject to Change!

**Ultimate Soccer Arenas, Pontiac, MI, Indoor
 Free Flight Flying**

Thursdays at field 3 of the Ultimate Soccer
 Arenas starting at 10 a.m.

Premier Sports Center, Indoor RC Flying

14901 23 Mile Rd, Shelby Charter Twp, MI 48315
 Indoor RC Flying has begun at Premier Sports Center,
 23 Mile and Hayes, every **Thursday** from 9 AM to 3
 PM.

04/14/21 EFO Meeting on ZOOM, 7:30 p.m. EST.
 EFO members, I will email the URL for the meeting
 close to the meeting date.

APRIL 9 & 10, 2021 Toledo Swap Meet (details in
 this issue)

May 29, 2021, Saturday, Keith Shaw Birthday Party
 Electric Fly-in 2021 (details in this issue)



The Ampeer/Ken Myers
 1911 Bradshaw Ct.
 Commerce Twp., MI 48390
<http://www.theampeer.org>

The Next Monthly Meeting:

Date: Wednesday, April 14, 7:30 p.m.

Place: Zoom - details to be emailed to members