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November

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The Next EFO Flying Meeting: Sat., Nov. 6, 2021
Time: 10 a.m., Place: Midwest 7 Mile Rd. flying field

What's In This Issue:

FrSky, Spektrum and Other Proprietary RF Protocol Radio Systems in Use In the USA in the Fall of 2021 - The August and September EFO Flying Meetings - John Hoover Inducted Into the AMA Hall of Fame - Info On the Upcoming MRCS November Swap Shop - Upcoming Events

**FrSky, Spektrum and Other
Proprietary RF Protocol Radio Systems
in Use In the USA in the Fall of 2021**

By Ken Myers

Forward:

On a trip to the flying field on Saturday, September 18, 2021, I saw **Dave Stacer** return a Bixler and transmitter to **Sean Logan**. Dave had set up the transmitter and plane for Sean. The transmitter was a FrSky Taranis X9D that Sean had purchased several years ago. After Dave test flew the plane, there was a bit of talk about radio systems that are available today, in the fall of 2021.

There was some talk about whether Sean might want to move to a Spektrum radio or remain in the FrSky ecosystem.

In the following article, I've presented some information about the FrSky and Spektrum ecosystems.

FrSky and Spektrum Information

A Bit of Info Regarding FrSky

First, the company name, FrSky, is pronounced Free-Sky, per their own documents.

<https://www.frsky-rc.com/wp-content/uploads/2017/07/Manual/Quickstart%20Guide%20for%20FrSky%20Taranis%20with%20OpenTX.pdf>

Dave and I discussed some of the problems with the FrSky ecosystem and OpenTx, while at the field that day. One problem was that the FrSky ecosystem is very complicated at this time, fall 2021. FrSky's most current systems use the ACCESS firmware (protocol?) and OpenTX as the operating system (OS). Before that FrSky used the ACCST firmware, which came after their original firmware.

If you visit the Aloft Hobbies Transmitter Website page, you are presented with the following information. <https://alofthobbies.com/radio/frsky-transmitters.htm>

Note that I've used ... when I deleted some of Aloft's wording and put things that I found "interesting" in **bold font**.

"FrSky offers two LCD displays, Large and Small and they have two larger Color displays, one with touch screen. The small displays are in the Xlite and X9 Lite and Q X7 radios, the Large LCD is in the X9D

and X9E radios, and the large Color display is in the X10 and X12 radios while the large color touch screen is on the X20 transmitters.”

and

“All of the radios can run on OpenTX except the X20.

This (*OpenTX KM*) is a very powerful programming environment. ... The X10 and X12 radios come with a menu driven system called FrOS, ... but if you want the power OpenTX you install it onto the radio! ...

The X20 transmitters run the new EthOS firmware, a new development exclusive to FrSky. Think of it as an easier to manage OpenTX. (*Note that it says firmware, not protocol or OS and exclusive is misspelled. KM*)

All of the FrSky radios also have an open module bay on the back. ...

FrSky does not include much in the way of instructions, so at Aloft we offer a wonderful professionally written series of manuals. ... We highly recommend these manuals for everyone, new or not.”

On Aloft's Receiver Webpage it notes:

“The FrSky Family breaks down to the Archer, ACCST and vintage forms. Archer's use FrSky current ACCESS protocol (Note that it says protocol not firmware. KM) and is a very robust line of receivers. The ACCST family are a little older and bind in D16 mode while the vintage series will be binding in the very old D8 mode.”

<https://alofthobbies.com/radio/frsky-telemetry-system.html>

Besides OpenTX, FrOS, and EthOS there is a newer “fork” of OpenTx called EdgeTx. There is another open source OS known as erskyTx, which can also be used on FrSky transmitters.

<https://youtu.be/txOIORen-BA?t=159>

More information regarding erskyTx can be found here:

<https://forum.alofthobbies.com/index.php?threads/about-erskytx.2028/>

A note on the link from above says, “Development continues in both erskyTx and openTx, with ideas and code passed between them.” The date of the post was May 6, 2021.

FrSky, the hardware manufacturer, is not OpenTX, the operating system, and OpenTX is not FrSky but they are related and associated with each other. They have a symbiotic relationship. That

means that a change in either one of those affects the other.

FrOS is a “fork” of OpenTX created by FrSky. OpenTx and EdgeTx are open source software operating systems created and shared by dedicated individuals worldwide.

We also discussed some of the problems with OpenTx.

A look at the OpenTX download page demonstrates both the advantages and disadvantages with the OpenTx OS.

<https://www.open-tx.org/downloads>

Today's date is 10/07/21 and it is 7 days since the latest update of OpenTX to a newer version of 2.3.14.

The following listing covers the most recent 497 days with 8 updates visible and one NOT visible on the download page.

OpenTX 2.3.14 (2021-10-01)

Emergency fix of Companion for Windows

<http://www.open-tx.org/2021/10/01/companion-downloads>

OpenTX 2.3.14 (2021-07-23) lasted 69 day

OpenTX 2.3.13 (2021-06-24) lasted 29 days

OpenTX 2.3.12 (2021-06-14) lasted 10 days

OpenTX 2.3.11 (2021-01-08) lasted 157 days (most stable version)

OpenTX 2.3.10 (2020-10-06) lasted 94 days

OpenTX 2.3.9 (2020-06-14) lasted 114 days

Note: “This version fixes two issues introduced in 2.3.8 (<https://www.open-tx.org/2020/06/13/opentx-2.3.8>)”

OpenTX 2.3.8 (2020-06-13) lasted 1 day

Note: “CRITICAL ISSUE download of this version disabled”

Note: A lot of fixes with a lot of stuff on various Tx and in Companion!

<https://www.open-tx.org/2020/06/13/opentx-2.3.8>

OpenTX 2.3.7 (2020-03-28) lasted 67 days

Note: “New since 2.3.6. Replaced the Same day COLORLCD

remove FrSky OTA lastest change as it crashes SD Manager”

OpenTX 2.3.6 (2020-03-28) (lasted less than one day)

All of these were posted as stable versions on the OpenTX download page, but there were three critical updates during the time period!

2.3.6 lasted less than one day before 2.3.7 was released. 2.3.8 lasted 1 day before being updated to 2.3.9. 2.3.12 lasted 10 days before being updated to 2.3.13 and even then 2.3.13 only lasted less than a month, 29 days, before being updated to the current version of 2.3.14, which has been current for the last 5 days.

Confused yet?

The OpenTx project page can also add more confusion when trying to learn and use OpenTx.

<https://www.open-tx.org/>

I'd been looking at a FrSky Taranis X9 Lite S and wanted to know if it was a supported radio.

When I clicked on the Radios tab on the OpenTx homepage on September 25, 2021, the Taranis X9 Lite S was not there but I knew that I'd seen it in the OpenTx Companion list of supported radios.

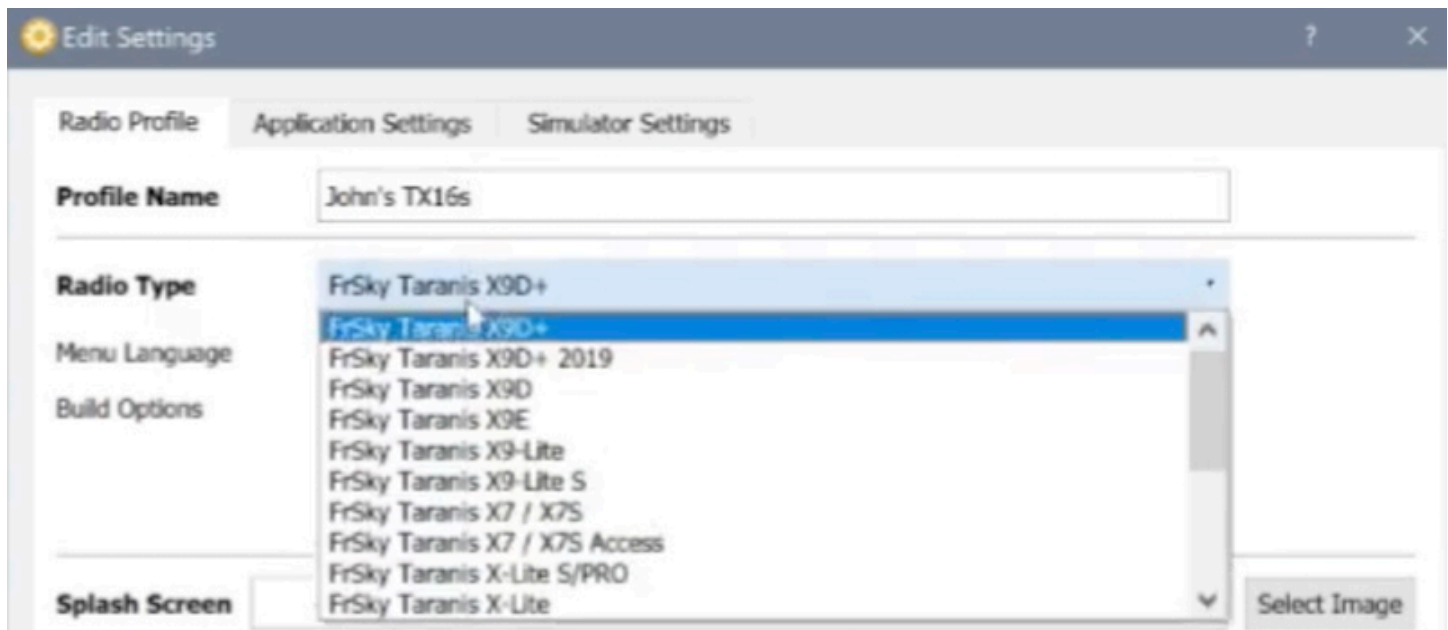
on July 27, 2020, as shown above. The S version was released in August of 2019 and the original, without the S appended, in May of 2019.

You'd think that FrSky hardware and OpenTX are not the way to go and that "biting the bullet" and purchasing the much more expensive Spektrum brand, where the hardware and software are "designed in house" would be the way to go, and it just might be but...

A Bit of Information Regarding Spektrum

Spektrum has their own ecosystem. For the most part, Spektrum does a better job of keeping legacy receivers compatible, compared to FrSky. You can also go to almost any hobby shop in the US and purchase Spektrum transmitters and receivers, along with bind and fly (BNF) planes that have Spektrum receivers in them. The BNF planes are ready to bind to a Spektrum transmitter and then start flying them.

If you look for the Spektrum brand of transmitters, DX#, NX# and iX12 or iX20 in the Radios section of RC Groups, you'll see posts noting some of the problems that users are having,



I then found that radio listed here. (Look in the middle of the shown list.)

<https://youtu.be/J62oJ9gP3j4>

July 27, 2020 (Please Note the Date)

I thought that it was odd not to have the S-version listed on the OpenTx Radios tab page, since it was in the list of supported radios in Companion

or had, with their past and even newer Spektrum equipment.

<https://www.rcgroups.com/radios-135/>

The NX line of Spektrum transmitters, their newest iteration, has had several firmware updates, to fix bugs in the OS, since being launched in October of 2020.

<https://youtu.be/aNCC7yGRQyM>

While in the Radios section of RC Groups, you can also look for information regarding OpenTX and FrSky equipment.

In the Vendors section of RC Groups there is also a dedicated thread for FrSky.

<https://www.rcgroups.com/frsky-877/>

A Word about Programming, Firmware Updates and the Like

When it comes to programming, both Spektrum and OpenTX have “learning curves”. For someone who’s never used a RC transmitter, programming beyond a basic 3-/4-channel plane can be perceived as difficult because the beginner has no idea how some of the options, past the basic three of four functions, actually work on a model airplanes.

Over time, both of these operating systems have added more and more features and abilities to their operating systems. FrSky and Spektrum have both “upgraded” their hardware as well. Both are, arguably, very reliable in the air, where it counts.

Spektrum has, by far, a much larger following in the RC model airplane community, so help with questions and general setup help can usually be found at almost any RC model flying field as well as online in forums and from Horizon Hobby.

FrSky and OpenTX have a huge presence/following on YouTube, so help can be found almost anytime of day or night on the Internet.

Both systems require a fairly decent understanding of computers and/or cell phones to update firmware and save files for specific settings and models. Those are advanced skills for sure.

A recent YouTube video exists where a young man shares his opinions regarding Spektrum and FrSky with OpenTx. He based the information, that he presents, in this video after using both Spektrum and FrSky equipment using OpenTX for several years.

I have presented MY comments regarding this video. MY comments should provide some background **before** viewing he video.

My comments regarding this video:

1. At 0:40 Tim holds up a Spektrum DX6i, that he has obviously painted blue, and notes that it was the first Spektrum transmitter that he purchased. The early DX6i, circa 2007 - 2009 had two physical flaws. The trim switches and scroll wheel stopped working after a short period of use. A cottage

industry arose to provide a fix for this quality control problem. A gentleman made, and supplied, new trim switches and a scroll wheels specifically for the DX6i. The earliest DX6i transmitters used DSM2 where only 2 channels of the 2.4GHz spectrum were used. That protocol was change on the DX6i to DSMX in about 2009.

2. At 4:31 he talks about who has the “better” 2.4GHz radio link. What he says here is very much an opinion and he does not present any facts to back up his statements.

3. At 5:38 he notes that he had a problem with one Spektrum receiver and goes on to note that, because of that one problematic receiver, he now uses Lemon receivers with his Spektrum transmitters for his outdoor models. It is not unusual for any brand of receiver to have a problem. Sometimes the problem might affect a whole line of receivers, but sometimes it is just that one single receiver. That’s why we do a range check.

4. At 8:40 he discusses stick tension. Stick tension is an extremely personal preference. He likes his very loose. I like my rudder stick to have quite a bit of tension compared to the throttle stick so that it won’t move the rudder accidentally when I’m moving the throttle. I also like a ratchet sound and feel on the throttle, while others prefer no sound and a smooth sliding motion. I also like the elevator stick to have more tension than the aileron stick so that it makes it a bit more difficult to add unwanted elevator commands when using the aileron stick.

Overall it is a pretty good video and with mostly spot on information. It was posted on May 16, 2021.

<https://youtu.be/eLiwo3VJY1c>

Comparing a Simple Airplanes Setup on Both Radios

The following video, although older, shows **one way to set up a basic airplane** on the FrSky Taranis line of radios. It also has a brief description of how the Taranis differs from a Spektrum DX7 and actually all other proprietary menu driven programming systems by other manufacturers. This is also how to do it on the Jumper T12 and RadioMaster TX12.

(2/12) FrSky TARANIS Radio - Introduction to TARANIS model setup basics

Source: Painless360, May 15, 2015

<https://youtu.be/azs1wmr4c7w>

The next video demonstrates **another way to set up a basic airplane** using transmitters that can use OpenTx and that have large color screens such as the FrSky Horus line, Jumper T16 and T18, Radio King TX18 series, Eachine TX16S and the various versions of the RadioMaster TX16. Instead of using pages as the smaller screens do for each selection, the larger screens present tabs across the top. Other than that, the programming is exactly the same for both screen types.

The following video is long as John Hopke was doing a live class when he made it. It covers a lot more info and his demo plane is pretty neat. New Spektrum receivers also use a bind button on the receiver not the old bind plug method, as he mentioned in the video.

He demonstrates two ways to do a throttle cut. I recommend you skip through the second way to do the throttle cut and start at again at 32:32, where he starts discussing dual rates. Watching the video can be ended at 36:30 if you wish. There is a bit of programming involved here, more so than with a Spektrum. He also has a video that fully covers programming dual rates and exponential, <https://youtu.be/kd7etAzXGEA>. This video is more info than most need to know at this time. [s](#)

OpenTx Class • OpenTx is EASIER than you THINK • Learn About OpenTx

Source: RC Video Reviews, February 16, 2021

<https://youtu.be/3BXxOt74MAY>

Other Radio Systems for RC Airplanes

I concentrated on the previous two radio systems, as they are currently available and somewhat in competition.

There are also other systems that are currently available that will certainly work with RC airplanes.

A Look At Some Other Brands

John Salt does a quick review on many of the RC systems that can be used in airplanes, as well as helicopters. He left two brands in his updated article that are gone now. Hitec and JR are no

longer available. I searched a lot for Graupner HoTT, and cannot find a dealer with much of this line in stock in the USA, especially at the lower price points.

Futaba Radios & The Rest

Is Any One RC Transmitter Brand Truly Better?

by John Salt - Updated September 2021

<https://www.rchelicopterrfun.com/futaba-radios.html>

My review of the **FlySky FS-i6X** and companion receiver appeared in the October, 2021, *Ampeer*.

<http://theampeer.org/ampeer/ampoct21/ampoct21.htm#FLYSKY>

RadioLink AT10ii

Futaba 10CAG Rip off Radiolink AT10II 2.4Ghz 12CH DSSS FHSS RC Transmitter

Source: alishanmao, May 6, 2019

https://youtu.be/Az0_wUFWCFo

The USA warehouse of Hobby King has several lines of stick transmitters available.

https://hobbyking.com/en_us/radio-servos/radios/stick-radios.html

Their Orange brand uses supposedly uses DSM2/DSMX as protocol. Many of the transmitters, labeled TGY, are rebranded FlySky. They also have various iterations of the RadioMaster TX16 multi-protocol transmitters available.

WFLY is also available in the USA at the present time. They tout themselves as a long time Chinese producer.

<http://www.wflysz.com/introduce/>

Their line is sold on Amazon. Some of their line, transmitter and receiver combos, appear to be available here in the US, but most of their receivers are not.

Wfly ET16S 2.4Ghz RC Radio's - REVIEW + BRAND INTRODUCTION !

Source: DutchRC Adventures, July 1, 2021

https://youtu.be/W8kSURyJU_8

More on OpenTx Programming for Those Interested

Lee Schofield (Painless360), has a very good playlist on YouTube for the older Taranis X9 style transmitters. The videos are older, May 2015ish,

and the information should match Sean's Tx quite well, I believe.

<https://www.youtube.com/watch?v=WpYO7HkixGQ&list=PLYsWjANuAm4rtLZuLU2eSTc3svqWx-pa1>

John Hopke (RC Video Reviews) has four relevant playlists for using OpenTX on YouTube. The playlists are much more current regarding the "how-tos" of OpenTx. He uses a RadioMaster TX16 transmitter for his lessons. That Tx has the large color screen that shows tabs instead of the pages shown on Sean's transmitter, but the programming is the same.

OpenTX Tutorial - Beginner Series

https://www.youtube.com/watch?v=ye9Yaj_jUA8&list=PLy3TC1ILJYTjqDXFB84oXVWZG14zyMYYt

OpenTX Tutorial - Intermediate and Advanced Series

<https://www.youtube.com/watch?v=qM3a-WdIg0o&list=PLy3TC1ILJYThzwReZComrM-LFTa2wfiUW>

OpenTX Snippets

<https://www.youtube.com/watch?v=S4QYoLFIMf0&list=PLy3TC1ILJYTjsMsQ2YF5ZCUubv0IFiWkd>

OpenTX Classes

<https://www.youtube.com/watch?v=gxSeGbVqbNw&list=PLy3TC1ILJYTgH-MMqDYhrCh6Bp65BJzS>

Much of the information on YouTube, regarding OpenTX and FrSky, is "drone" oriented. I like both of the previously mentioned guys as they are not just "drone" fliers.

Josh Bardwell also has a lot of good info on both FrSky and OpenTX scattered through his videos on YouTube, but he is a "drone" guy and is actually the columnist for drones in Model Aviation at this time.

<https://www.youtube.com/c/JoshuaBardwell/videos>

Others I've found on YouTube with good OpenTX and/or FrSky info are;

Andrew Newton
Bill Clark
CurryKitten
MetalAviation
TweetFPV
R. Scott Paige
Paweł Spychalski
Wayne Flower (owner Aloft Hobbies)
John Salt
Mr. D - Falling With Style

A Quick Look at Spektrum Programming

The following video gives a quick look at the current programming and menus used on Spektrum DX#, NX# and iX# transmitters. An ix20 is used for the demo, but Tom Cogswell notes how to do it on the most up to date DX# and NX# transmitters.

Spektrum Quick Hit Tech Tip - How to setup Thrust Reversing on Avian ESCs and BNF Aircraft

Source: SpektrumRC, Sept. 28, 2021
https://youtu.be/_ZHWzBWe1e0



Denny (foreground) and Pete (background) flying on this very grey day

The August and September EFO Flying Meetings

Saturday, August 7, 2021 was a very overcast day, but it did not rain.

While the attendance was a little low, we all had a great time.

Ken, Dave and Denny were able to help a new flier with his plane, and Ken got the chance to actually hold and fly a RadioLink A10ii transmitter.

Denny Sumner spent a lot of time helping the newcomer. Thanks for your expertise Denny!



On **Saturday, September 4, 2021** the sky started off a bit dark, but it grew a bit brighter as the day went on. The attendance was quite good. It finally turned out to be a great day for our monthly get together.



Pete Foss flew his Flex Innovations FV-31 CYPHER VTOL SUPER PNP.

<https://www.flexinnovations.com/product/fv-31-cypher-vtol-edf-pnp/>

It flies and behaves very well in the air. It uses a flight controller to control the flight modes and the controller works very well. Thanks for sharing Pete!

The guys gathered and chatted on the cool morning.



Dave Stacer assists the new flyer with his plane and radio system



**Dave Stacer, Jim Young, Denny Sumner and Paul Sockow
have a chat**



Around lunchtime, the sky brightened. Lynn Morgan's pattern plane is shown in the front, center of the photo. Lynn flies in pattern contests throughout the Midwest.



Midwest's sunshades and Jim Young flies in the background.



Keith is shown taxiing out for a takeoff. His old Multiplex Cockpit has been updated with a FrSky internal module.

The last photo shows what a beautiful day it turned out to be as the guys chat away under one of



**John Hoover Inducted Into the AMA Hall of
Fame**

From Joe Hass via email

On Sunday, September 19, 2021 it was my pleasure to present John Hoover with his plaque and paperwork inducting him in to the Model Aviation Hall of Fame.

Once I confirmed John's induction, I worked with John's wife Tracie and family for a "surprise" event at his hobby shop (Flightline Hobby in Lake Orion, MI). The local clubs that John supports were on board. More on the "surprise" later.

I have a very specific program for HOF inductees. The announcement letter is framed with a generous mat so that those attending can sign and add their personal messages. There is a specially

decorated cake. In this case we also had sandwiches, snacks and beverages. I also create a presentation binder with the nomination and other related memorabilia.

As she has done so many times in the past Erin Dobbs, from AMA headquarters, provided that unfolded announcement letter as well as the supporting documents and plaque in record time. Prior to that Erin helped with a last minute addition to the nomination to get it in before the deadline.

Coincidentally, I had submitted an article about John to Jennifer Alderman for the VIEWFINDER. While the article documented John's many contributions it did not include anything about the HOF. I submitted an amended article with the HOF announcement and Jennifer used that in the October issue of MA. She also got me a PDF of the article so I could have it printed and framed for John before the presentation.

With a series of less than truthful stories I got John to agree to use the front of his store for a "surprise" presentation. Tracie confirmed that John had no idea what was going on.



Three days before the "surprise" I stopped in the store for some supplies. Tracie happened to be there and whispered to me "John knows". With the publication of the digital version of MA the world knew of John's induction. The first congratulatory communication to John came from France! The cat was out of the bag. While we didn't have quite the "surprise" we were planning we had a great time thanks to the work of Erin and Jennifer.
(See *Model Aviation*, October 2021, *Viewfinder*, p. 22 to learn more about John. KM)



Thanks,
Joe Hass

Info On the Upcoming MRCS November Swap Shop
From Rudi Reinhard via email

MIDWEST R/C SOCIETY R/C SWAP MEET
Sunday, November 7th, 2021
8:15 A.M. to 11:45 A.M.

Location

Northville Senior Community Center
303 West Main Street
Northville, Michigan
Latitude 42 43 04 North Longitude 83 48 60 West

Admission Charge

\$5.00 per person-donations always welcomed
(active duty military, kids under 12, and women are admitted FREE)

Vendor Table Cost

\$20.00-\$25.00 per table, payable in advance, depending on table location

The vendor table cost includes one admission. Vendor set up time is 7:30am.

Advance table reservations are recommended since walk-in tables might not be available and they cost \$5 more at the door!

For information and table reservations

Call Rudi at: 248.631.8205 or
e-mail: therudi@icloud.com

Directions Exit I-275 at 8 Mile Road and go west 2.5 miles to Center Street. Go south on Center Street for a 1/2 mile and then west on Main Street. The Northville Senior Community Center is located at 303 West Main Street.

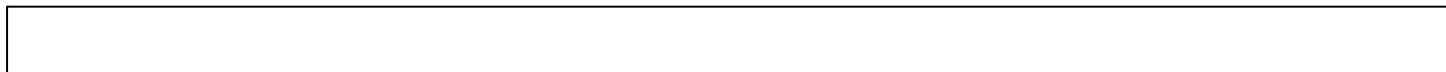
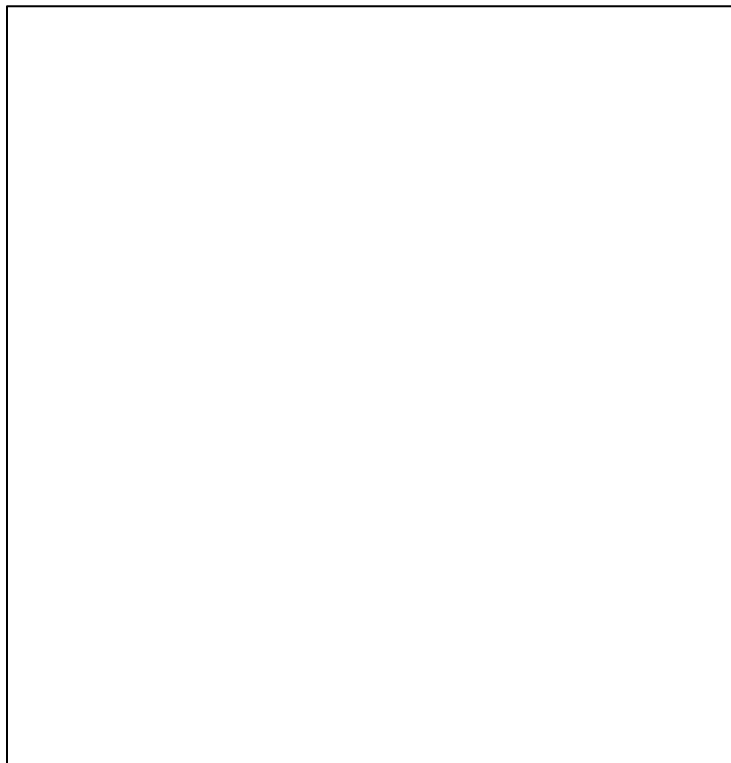
There is free parking in the back of the building, off Cady Street.

As always, the LARGEST and BEST swap meet in SE Michigan

Upcoming E-vents

November 6, Saturday, EFO Flying Meeting, 10 a.m., Midwest RC Society 7 Mile Rd. Flying Field

November 7, Sunday, Midwest RC Swap Shop, (details in this issue)



The Ampeer/Ken Myers
1911 Bradshaw Ct.
Commerce Twp., MI 48390

<http://www.theampeer.org>

The Next Monthly Flying Meeting:

Date: Saturday, Nov. 6, Time: 10:00 a.m.

Place: Midwest RC Society 7 Mi. R. Flying Field