the Monitor

March The MRCS Officers 2015

Next Meeting: Date: Wednesday, March 4
Time: 7:30 pm, EAA Building, Mettetal Airport

What's In This Issue:

The February 2015 Meeting

Guest Speaker, Lynn Morgan
Topic: An Introduction to Multi-rotors

A Report from **Arthur Deane**

At the February meeting **Lynn Morgan** discussed, "An Introduction to Multi-rotors". This is an area that he and **Larry Markey** have been at the forefront of development for the last few years.

The evening's video was shown (Link 1) that demonstrated advanced model based control logic currently being developed and under study for multi-rotor control. This is a must see for the current advanced control logic.

Lynn started with a discussion of the basics of quad operation; roll, pitch and yaw motion and provided information on the various control modes such as home lock, course lock and GPS. A detail summary was provided of various controller boards currently on the market.

One example of a controller board and setup software was discussed.

Helicopter Frequencies
21,27,29,39, 41
Sailplane Frequencies

Lynn discussed the range of commercially available quadcopters and FPV goggles; ranging from micro indoor models to large commercial units. He also demonstrated his home built goggle system which provided a quality experience at much lower cost than equivalent commercial units.

Lynn's homebuilt goggle system

A discussion took place relative to learning to fly quads. A key element of these vehicles is learning to coordinate throttle and pitch stick movements for controlling altitude. The latest Real Flight (Link 2) has quad simulation built into it and is useful to learn the basic techniques.

The Blade Nano Rx ($70) was recommended as a simple and robust training platform that could be flown in a basement. A local hobby group is also available (Link 3) which holds local meeting and educational programs.

The techniques of indoor and outdoor quad racing were discussed. Lynn suggested that this would be the next major growth area for hobbyist quadcopters. (Arthur's note: Computers were a hobbyist fad until the internet was developed. Racing will be the app that does the same thing for hobbyist quad flight.)

A video was shown (Link 4) that showed indoor racing around a course coupled with an insert of the pilots stick movements. This highlighted the piloting skills need for this activity.

The current legal and AMA regulations were explained. AMA regulations and guidelines are contained in AMA Publications 550,551, 560, 570, 580. These publications detail all aspects of FPV flight including pilot classifications, range, altitude and speed limitations. It is recommended that all FPV pilots be familiar with these rules.

Many thanks to Lynn for a very informative presentation.

Subsequent to the meeting, the FAA has released proposed rules for quadcopter operation. It appears that the FAA have decided that regulations will not apply to model aircraft flown as a hobby or for recreation. This is good news for the hobby. Members interested in quads should note the "Know Before You Fly" program set up in conjunction with the Small UAV Coalition. (see discussion in the March 2015 *Model Aviation* magazine)

Links

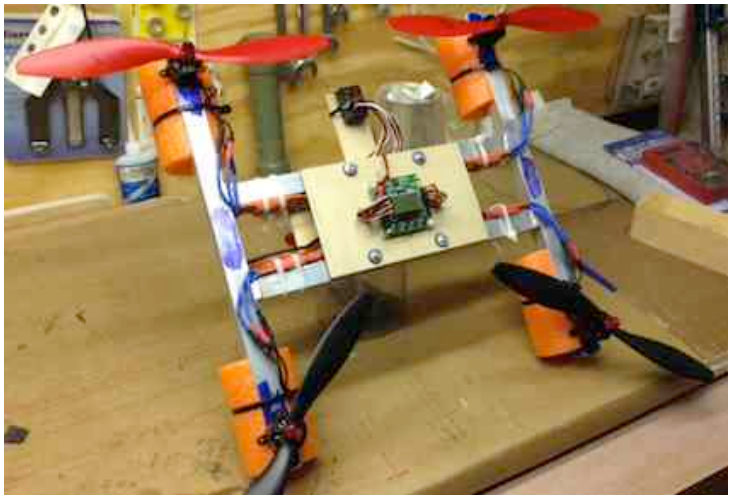
Link 1 Quad advanced control techniques
http://www.youtube.com/watch?v=w2itwFJCgFQ

Link 2 Real Flight computer simulation 7.5
http://www.realflight.com/freeupdates/index.html
https://www.youtube.com/watch?v=wSfH_A4hSas

Link 3 detroit-drone.com
http://www.meetup.com/DetroitDrone/

Link 4 Indoor quad racing
https://www.youtube.com/watch?v=8hWTZPirmqI

Charlie Dochenetz demonstrated a scratchbuilt quadcopter he is working on. Design is based on design material available on Youtube. His plan is to first finish the project as a trainer with subsequent additions of a camera and ultimately FPV capability.



Roger Wilfong demonstrated two, converted Hitec Hawkeye EPO (Expanded Polyolefin) handlaunch gliders.

The red winged one has the guts from an Eflite Beast (brick, servos & brushless motor). It is full 4 channel with a small linear servo on each aileron. All up weight is about 95 grams depending on which battery (200 or 300 mAh). It uses about 100 mAh on the typical 6 minute flight. At demonstrations at the Legacy and Ultimate indoor flying meets several people thought it was fast at half throttle. They were amazed when model was operated at full throttle.

The twin boom plane was an experiment. The tail was chopped off the fuselage about an inch behind the wing and the stab supported on a.pair of small, light carbon fiber tubes. The fins were made from Depron and, combined, are 10-20% larger than the single fin on the Hawkeye.

This plane uses more conventional gear - there's a Lemon DSM2 receiver, two 3.7 gram servos, an 1811-2000 outrunner & a 6 Amp ESC. The model doesn't have a rudder. It came out about 10 grams heavier than the first one. The plane flies as well as the first one and if anything it glides better (probably because the nose is cleaner and the prop stops when the throttle is cut). It's as fast as the first one, but at full throttle it's a handfull – Roger never noticed how much he makes minor, unconsious corrections with the rudder until he switched between these two planes.

It is reported that Nankin may have a couple of these Hawkeye gliders for $15 or $16 each.

Roger Wilfong holding the Hitec Hawkeye kit. (Dave Stacer photo)

Dave Stacer shared his latest electronics project. It logs the data that is output by a CellPro charger and displays it back for reveiw. It also has bluetooth capability to display the data on a cell phone or computer. Besides learning how the CellPro chargers output data, he had to write a program to display the logged data.

To change your email address contact Ken Myers at kmyersefo@mac.com

The 2015 membership application is available at the club Web site,
http://www.midwestrcsociety.org,
for downloading with the link on the homepage.

IMPORTANT: Channels 36 & 56 May NOT be used at the 7 Mile Rd. Field

Upcoming Events

Feb. 24, Tuesday, Skymasters' Indoor flying continues at the Ultimate Soccer Arenas, Pontiac, MI, 11 a.m. to 1 p.m. - Started Tuesday, Nov. 4 with 26 flying days this winter for a total of 57 hours of flying fun from November through March.

Feb. 26, Thursday, Indoor flying continues at the Legacy Center, Brighton, MI, noon to 2 p.m., Started Thursday, Nov. 6 Indoor Flying at the Legacy Center in Brighton MI for the Fall/Winter 2014/2015 season and runs through April 30th, 2015.

February 4, Wednesday, Midwest monthly meeting, EAA building, Mettetal Airport, video at 7, meeting 7:30. Guest speaker, to be announced

April 6, Monday (7 p.m. to 9 p.m.) and again on **April 7**, Tuesday (11 a.m. - 1 p.m.), Hobbico will be visiting the evening of Monday April 6 (7-9 PM) and again for indoor flying on Tuesday April 7 (11 AM to 1 PM). The special guest scheduled is Futaba Team Manager Frank Noll. Both events are at the Ultimate Soccer Arenas in Pontiac. Lots of pilots' prizes. Sponsored by M.I.A.A.
Contact Joe Hass 248-321-7934

April 10, 11 & 12, Weak Signals' Toledo RC Expo, Toledo, OH, Info at Web site: toledoshow.com

IMPORTANT NOTICE!
2015 DUES ARE DUE BY THE END OF THE MARCH MEETING WITHOUT THE ADDED $25 LATE FEE!

Midwest RC Monitor
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