

the

MONITOR

February

The MRCS Officers

2016

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Next Meeting: Date: Wednesday, February 3

Time: 6:50 pm video, 7:30 Meeting, EAA Building

What's In This Issue:

The January Video - Prop Talk: A Presentation by Keith Shaw - January Midwest Meeting Notes - January Show and Tell - A Mooney Mite: Denny's At It Again - Upcoming Events

The January Video

The January Aviation video was excellent and covered a lot of very interesting topics.

Prop Talk

A Presentation by Keith Shaw

The propeller is an extremely important part of our hobby.

Most propeller technology and development has really stopped, and it hasn't changed much since the 1930s.

Our model props started out as wood. Some of the early model props provided extremely poor performance and efficiency, while others probably couldn't be beaten today.

Keith passed around a lot of very old props, from his collection, for folks to look at. Many of them can be seen in the photo.

Prop Terminology:

Diameter, Pitch, Profile (blade shape), Airfoil and the Progression or Helical Pitch are terms frequently used with



props. Helical pitch is okay, but props can be modified for special purposes.

Pitch speed is an extremely important term when evaluating prop for possible usage.

Helicopter Frequencies

21, 27, 29, 39, 41

Sailplane Frequencies

11, 12

Pitch Speed is approximately the pitch, in inches, times the RPM in thousands. A 7" pitch prop at 8,000 RPM would have a pitch speed of approximately 56 mph. Whether or not the airframe is capable of reaching the pitch speed depends on the cleanliness of the the airframe.

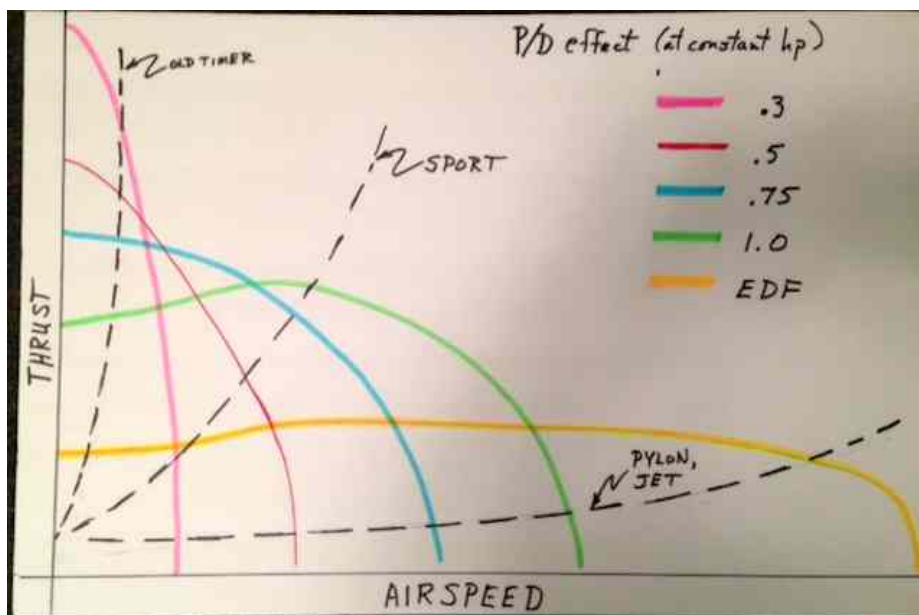
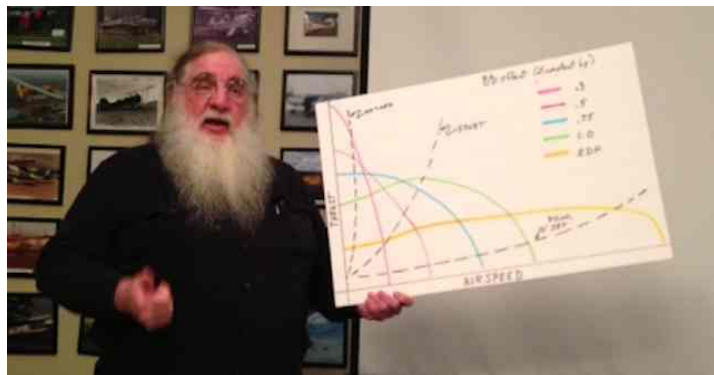
Power is linear to pitch but raised to the 4th power when related to the diameter. To change 10% in RPM takes about 40% more power.

Prop efficiency is really difficult to determine. Props are always a compromise.

There is actually an airplane behind the prop, and the two cannot be separated.

Pitch to diameter ratios are important when considering prop selection. A 24x14 prop has approximately 0.6 diameter to pitch ratio.

Keith shared a chart that showed typical diameter to pitch ratios and their most common uses.



He has found that variable pitch props don't work all that well for our models.

When doing conversions from glow to electric power, and wanting to use a power system on hand, sometimes a 3-blade or other multi-blade prop can be used to soak up the power, just as with full scale aircraft. When trying to select a 3 or 4-blade prop to replace a 2-blade prop, find a 2-blade the power system is happy with. For a 3-blade prop, shrink the diameter by 10% and for a 4-blade prop by 15%.

The most efficient prop is a single blade, followed by the most useful, a two blade.

At low to median speeds prop tip shape doesn't matter too much, but at extremely slow speeds the shape of the prop matters.

Squared off tips are pretty bad. Odd shaped tips are costly to produce on a large scale. Just a nice round shape is a good choice.

"Back in the day", Keith considered Zinger wood props as a prop kit. He could and would turn them into a good prop.

The problem with props designed for glow engines was that they didn't have a lot of pitch available because the idle on the glow engine might not be low enough to land the plane.

Today's props feature thinner airfoils and they are lighter. Many are made in molds for greater accuracy.

He noted that you should always make sure the prop is designed for the RPM you intend to use.

Tractor and Pusher Props. It doesn't really matter with electric power systems. The curved surface of the prop always faces forward. "Pusher" can be more efficient, but most planes are set up incorrectly to use that efficiency boost.

Balancing props is very important

Keith uses Scotch brand colored plastic tape, but he uses the clear. It has a very aggressive hold.

<http://www.amazon.com/Scotch-190CL-Colored-Plastic-125-Inch/dp/B00KLJS54S>

The tape is applied, as necessary,

close to the hub, on the backside of the blade. It does not change the performance of the prop.

For electrically powered planes, he sometimes colors APC props with Prizmacolor markers from Michaels and other types of fine line markers. Of course this won't work for glow planes.

He reminded folks to remove the molding flash along the leading edge of APC props and to be sure there is no burr.

He was asked about a large cowl's effect on the prop. He noted that the prop's area only needs to be 50% larger than the cowl's frontal area, since most of the work of the prop is done towards the tip.

Keith, thanks so much for sharing your insights. The Midwest members really appreciate you joining us, even though you were more than a little under the weather!

The January Meeting Notes

Lynn Morgan, club secretary, noted that our membership drive on now. Dues are expected to be paid by the March 2 meeting. Please get your application, copy of your AMA card and your \$100 dues to Lynn as soon as possible.

Dave Stacer, club treasurer, noted that we were on the positive side of the ledger by the skin of our teeth. The swap shop did a bit better than last year.

We did have some expenses that we were not really expecting. We opened the porta pottie earlier in the year and the equipment maintenance was more than expected.

Show and Tell



Chuck Wooley, past Midwest RC Society president and Midwest Life member, attended the meeting. He shared a recently finished Sig Kougar. It is powered by a Super Tiger .45 and is very fast. Chuck has always been known for his beautiful covering jobs, and this is one to be proud of as well.



Chuck also brought along several of the 'old' Midwest RC Society club jackets to share. What a great history this club has.

Thank you Chuck!



Joe Hass came as a guest and had several interesting aircraft to share with the club.

The Flyzone Seawind, from Hobbico, comes with retracts and flaps and lights installed. Changing the battery is very easy through cockpit. This is one very unique, feature packed and interesting, true amphibian.

<http://www3.towerhobbies.com/cgi-bin/wti0001p?&I=LXFRFR&P=ML>



A Mooney Mite: Denny's At It Again

The Flight Model Apollo 70 pattern plane is an exceptionally fine flying aircraft using a 6S LiPo pack and a Rimfire 60 motor.

<http://www3.towerhobbies.com/cgi-bin/wti0001p?&I=LXENFS&P=7>

Joe also presented the Helimax Voltage 500 3D Rx-R. He noted that it has outstanding 3D flight characteristics.

<http://www3.towerhobbies.com/cgi-bin/wti0001p?&I=LXFMHU&P=ML>

John Hoover's Bat is an excellently designed flying wing. It is available from John at Flightline Hobby in Lake Orion.

<http://www.flightlinehobby.com/>

Joe was going to a meeting with the FAA the following day. He asked Midwest members what they'd like him to tell the FAA representatives.

A very lively discussion followed. Hopefully, Joe got the message to the representatives of the FAA.



Full Scale Mooney Mite

Denny Sumner, Midwest RC member and designer/builder extraordinaire, is at it again.

This time, the object of his affection is a 1/6-scale model of the Mooney Mite. He has entered it in the Scale Build Off 5 on RC Groups.

<http://www.rcgroups.com/forums/showthread.php?t=2533763>

He drew up the plans and construction has begun on the 54" wingspan, 409 sq.in. model.

The design incorporates a large canopy/hatch to access the 3S 4000mAh LiPo battery. It will also use E-Flite 15-25 size retractable landing gear.

The construction is moving right along.

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

The 2016 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:

February 3, Wednesday, MRCS meeting, video 6:50, meeting 7:30, Meeting: Guest Speaker - Ken Myers

Tuesdays, 10 a.m. to 1 p.m. Indoor Flying at Ultimate in Pontiac for 26 sessions

Thursdays, Noon to 2 p.m. Indoor Flying in Brighton

See the Area Event page on the club Web site for the special indoor flying dates at both venues.

A Mooney Mite: Denny's At It Again cont. from page 4

As usual, there were some interesting 'obstacles' to overcome in the build, but Denny has handled them well.

Denny really enjoys modeling "seldom modeled General Aviation types".

Looking good, Denny!



Denny's Mooney Mite up on its 'pins'

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