



THE WEAK SIGNAL

Dec, 2009

Toledo Weak Signals Radio Control Club, Inc.
TOLEDO, OHIO CHARTER NO. 521

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This being my first letter as club president I want to again thank the membership for their support and to thank this year's club officers and trustees for their service. Also, a big thanks to Dale Rupert for his outstanding leadership over the years and of course Bill Sommers for his 13 years of guarding the treasury.

The club Awards Banquet was held November 7, and was attended by 125 members and guests. A good time was had by all. Dave Whittaker did a very commendable job with the MC duties and outgoing president Dale Rupert gave an excellent recap of the flying season highlights. Club members Ryan Clark and Andrew Jesky were recognized for their respective AMA national championships and ETOC finishes. Dick Peebles was named the club contest champion and Rick Lederman the sailplane contest champion. Others receiving awards were Team 6 (Jim Skolmowski, Chris Skolmowski, Dave Leach, Gary Rexroad, Bob Kane and Dave Carpenter) winners of the sailplane league team championship and Andrew Jesky was awarded the league individual championship. Topping off the night's awards were the introduction off Mike Bayes and Jerry Sorosiak as new life members. I can't think of two more deserving members. Congrats to all of the night's awardees. A huge thanks goes out to Shane Whittaker, his wife Lianne and Mike Bayes for organizing the banquet. I believe the new location was a perfect fit for our needs.

Gary Rexroad and crew winterized the clubhouse and bathrooms last month. So remember, the port-o-johns are the only card game in town.

A couple of quick reminders... Proof of AMA membership must be shown to Steve Guerrero no later than January 1, 2010. Only the Business meeting on December 10th is left to do that.

With the holiday season approaching I want to wish everyone a safe and Merry Christmas. Please take a moment to keep our service men and women in your thoughts and prayers. They sacrifice so much for us.

Tim



Club Business

Remember to show your AMA membership to

Steve Guerrero steveg3615@buckeye-express.com 734-847-0020

BEFORE THE END OF THE YEAR.

FOR SALE

Sig Riser 100" all wood Sailplane. Ready for covering and radio installation. \$100.

Also have Apogee 100". This is all finished, wing was broken and repaired. Not test flown since repair. \$50.

Bob Erpelding
erpelding@tc3net.com
(517) 263-3189

WEBSITE UPDATES

The website has had some pages entered that include short cuts to different manufacturers and sites of interest to the club members. This is an ongoing endeavour. If you would like to share some links with the members please send them in for all to share.



THE WEAK SIGNAL Stuff

The answers to Last months little quiz.

1. First fighter plane ever to fly.

[The Vickers F.B. 5 Gunbus](#)

2. First flight of the first civilian aircraft ever to beat front line military aircraft in a race

[The Travel Air Mystery ship](#)

3. First U.S. production aircraft to exceed 300 MPH in level flight

[The Curtiss P-40](#)

4. First air attack on U.S. mainland

[Yokosuka E14Y](#)

5. First U.S. fighter to down an enemy aircraft during the Korean war

[The North American F-82 Twin Mustang](#)

This Month we will do a little bit of both questions and pics.

- 1) In 1930... The first solo flight from England to Australia by a woman is made by British Amy Johnson in a _____. She flies from Croydon, England to Darwin, Australia in 19 days.
- 2) In 1942... Squadron No. 588 of the Soviet Air Force, an all-woman night-bombing unit equipped with _____ biplanes is formed in the USSR.
- 3) In 1983... The first all-woman flight crew to fly a round trip across the Atlantic is the Air France _____ crew from the 18th Military Airlift Squadron, McGuire Air Force Base, New Jersey.

Can you name the plane? And no the picture is not turned.



Not sure but it looks like one hell of a ride!

Also if you receive this newsletter via regular mail but have an email account PLEASE email me at Toledoweaksignals@yahoo.com

That we can save a few dollars and send you the newsletter to you via email.

NEW YEARS DAY!

Come out to the field and join the traditionalists in a New Year flight! To some the weather does not matter as it is their wish to fly on this first day of every year. So lets join in and have some fun!



Continuation of Servo Article

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Commercial products

If you want to put RC servos to work, but don't feel up to the software or hardware, there are commercial packages out there...

Terror By Design

[Terror By Design](#) offers "Sync-It", a gadget that converts sound to servo movement. This looks ideal for use in animating skulls. Indeed, the web site includes a picture of a 42-inch skull animated with this unit.

For \$125, you get the Sync-It, a servo, power supply, and connective tissue.

TBD is also coming out with a fancier servo controller soon...

Effective Engineering

Effective Engineering, "<http://www.effecteng.com>" has a full line of servo gadgetry. This includes:

- 8 channel joystick-to-servo encoder
- tiny potentiometer-to-servo driver
- jaw-tracking servo encoder for animating talking monsters
- "look-alive" servo motion digital recorder and playback
- the M5 Animatronic Decoder. which lets you save servo sequences on a tape or CD and play them back
- servo reverser

Modification For Continuous Rotation

One popular modification to RC servos sets them up for "continuous rotation". Instead of moving through a range of about 90 degrees, a modified servo spins around and around. This modification is often used by those building their own miniature robots: the servo is turned into a combination motor, gearbox, speed control, and reversing switch.

I won't go into details of how this is done, but I will outline the general principle.

- A normal servo uses feedback to determine where the current angle is, as opposed to where the pulse train says it should be.
- The feedback comes from a potentiometer attached to the output shaft. The potentiometer is used in a voltage divider that produces a voltage proportional to the current angle.
- The incoming pulse train is measured, producing a voltage proportional to the desired angle.
- The one voltage is subtracted from the other.
- This difference drives the motor. Big differences drive the motor rapidly. Small differences drive it slowly.
- The modification removes the feedback and substitutes a fixed voltage divider set for 50%. [It also removes any mechanical "stops" used to prevent 360-degree rotation.]
- Now, the speed and direction of the motor is relative to a fixed voltage, not the current position. Pulses of medium width produce 50% voltage, no difference, no movement. Slightly longer pulses move the motor

slowly. Longer pulses more the motor faster. Pulses shorter than the medium width cause the motor to spin in the opposite direction.

You can see how handy this is to robot builders. Just bolt a couple of modified servos to the bottom of the robot, and put tires on the output shafts. Then just generate a stream of pulses to control speed and direction.

Digital Servos











All RC servos operate according to the instructions of a train of pulses, and could be thought of as digital. But in fact, they are easily and usually built from analog components.

A few companies offer servos that are actually digital inside. Such servos contain a computer chip that measures the width of the incoming pulses, convert the current potentiometer position to digital (or measure position digitally), compute the difference, and drive the internal motor digitally.

For the sake of discussion, the theory of operation is the same. The signals are merely processed in another way.

Further information on RC servos

For more information on RC servos, try the following web sites:

author	web site URL	content
Matt Verrochi	http://people.ne.mediaone.net/mverrochi/servoguide.htm  	table that compares servo types and brands
filipg@repairfaq.org	http://www.repairfaq.org/filipg/RC/F_Servos.html  	assorted servo info
filipg@repairfaq.org	http://www.repairfaq.org/filipg/RC/F_rc-offroad5.html  	assorted servo info
Hank Hagquist	http://rcvehicles.about.com/hobbies/rcvehicles/library/eih/bleih_swiring.htm  	nice chart of connector pins for various servo makers
Kevin Ross	http://www.rdrop.com/~marvin/explore/servhack.htm  	some servo basics; how to modify a servo for continuous rotation



MERRY CHRISTMAS

Christmas, a day when cheer and gladness blend,

When heart meets heart,

And friend meets friend.

* J.H. Fairweather*



IMPORTANT DATES

Dec 10th Meeting 7pm American Legion Hall
Jan 1st New Year Day Flying BE THERE
Jan 14th Meeting 7pm American Legion Hall
Jan 28th Meeting 7pm American Legion Hall
Feb 11th Meeting 7pm American Legion Hall
Feb 24th Meeting 7pm American Legion Hall