WESTERN OREGON CONTROL LINE FLYERS

THE WOLF CALL

January - March 2022

ACADEMY OF MODEL AERONAUTICS
CHARTER CLUB #3464

Upcoming Area Events

March 5 Salem Fun Fly

March 19 McMinnville Swap Meet

March 26 WOLF AGM

The "WOLF CALL" is the newsletter for the Western Oregon Control Line Flyers. WOLF members fly at the Bill Riegel Model Airpark facility at the Salem Airport.

WOLF membership is not required to utilize the facility, but fliers should be A.M.A. members. If you are not a WOLF club member, please consider joining us to help support control line model aviation activity in our area.

WOLF CLUB OFFICERS:

President: Craig Bartlett

Vice-President: Dean Singleton

Secretary-Treasurer: Mike Hazel

Safety Officer: John Thompson

Newsletter: Mike Hazel

For the latest Northwest Control Line news go to: flyinglines.org

Miscellaneous Ramblings from Ye Olde Editor

Greetings All! Weather sure has been from one end to the other the last few weeks. Great weather the last have of January and into February, and right now back into the wintry stuff.

We have got a lot of activities and events coming right up, and will cover those in more detail. Meanwhile as mentioned, some great weather recently with some good activitiy going on. Will Naemura was back stateside for awhile and took advantage of the January weather coming out the to field three times within just a week. Several other members also came out to fly and hobnob.

The Roseburg gang put on their fun fly February 5th at their new flying site. It's a great location with a couple of large grass fields, and some very civilized indoor facilities. Check out the report with photos on the flyinglines.org website.

WOLF will be hosting number three of the Oregon Fun Fly series on March 5th at our local field. With our field being more central than the other venues we can expect a pretty good turnout. The usual details, starting at 10 AM fly whatever you want and at about 3 PM we will have prizes to giveaway for all the pilots.

The following week will see the return of the McMinnville swap meet. This event was our area's first casualty being cancelled when the covid bug hit in 2020. Always a big turnout of sellers and buyers, and I suspect this year will be the same. (see flyer in this issue)

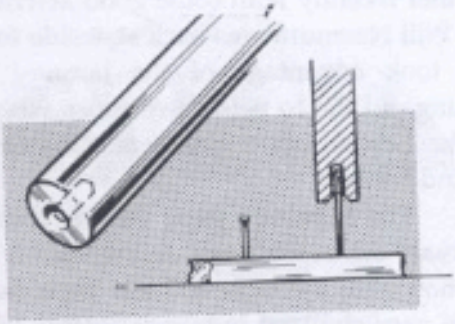
Miscellaneous Ramblings from Ye Olde Editor continued.....

Last and certainly not least, we have the return of the WOLF Annual General Meeting. Not being able to book our usual place, we are trying something new this time around and going fancy using a hotel meeting room. Check the flyer in this issue for the details.

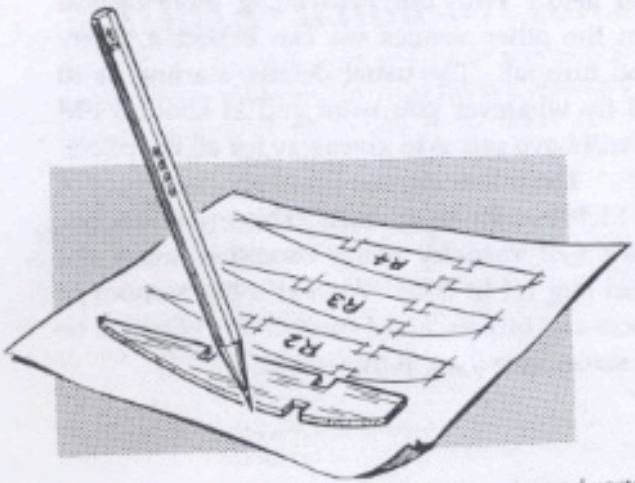
Guests are welcome at the meeting. We will need to confirm the number attending, so please let us know soon if you will be there and if you are bringing a guest. As always there will be some great door prizes for everybody.

Meeting room will be open at 11:30 for socializing and we will take care of our lunch orders sometime about noon.

If you still need to pay club dues that can be done at the meeting. Hope to see everyone there!



Use top of X-Acto knife as pin pusher. Drill small hole as shown. *Arthur Hoke, Brooklyn, New York.*

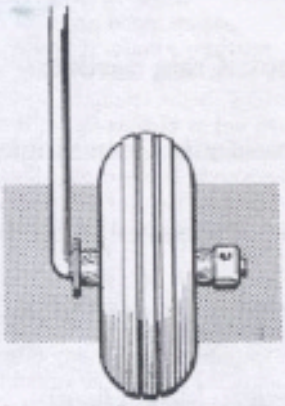


Before assembling kit, trace around parts in case replacements are needed. *Tom Steinmeyer, Edgewater, Colorado.*

Another One Bites the Dust

One less LHS (local hobby shop) that is. Leisure Hobbies on Hawthorne Avenue in Salem has closed. They posted a going out of business notice last November, and sometime before the end of the year they were shut down. They were not that well stocked for our needs, but did have the usual selecton of adhesives, wood and a bit of hardware. For Salem this leaves just RC Plus on 25th Street, which is not far from our flying field. This store mainly caters to the car crowd, but they do stock a few goodies useful to us. Check them out if you have not already done so.

Drill out Windex sprayer head and epoxy a tube in place. Makes fuel pump for pint cans. *M/Sgt. Bill Kopp, 616 A.C. & W Sqd. c/o APO New York.*



Nose wheel friction brake is two slices of surgical rubber tube; one each side of wheel. Move collar in or out to adjust amount of drag. *Ken Kurz, Savoy, Illinois.*

WOLF / Northwest Control Line Calendar 2022

March 5	Oregon Flying Fun #3, Salem
March 19	McMinnville Aircraft Modelers Swap Meet, McMinnville
March 26	WOLF AGM
April 22 - 24	NW Fireballs Jim Walker Meet, Portland
April 30	Oregon Flying Fun #4, Eugene
May 27 - 29	Northwest Control Line Regionals, Roseburg
June 3 - 5	AMA District XI Jamboree, Shelton, Washington
June 11 & 12	Stunt-a-Thon, Auburn, Washington
July 2	WOLF Lucky Hand Fun Fly (tentative)
July 17 - 22	AMA Control Line Nationals, Muncie, Indiana
July 30 & 31	R.F. Stevenson Raider Roundup, Auburn, Washington
August 12 - 14	Bladder Grabber Combat Contest (traditional date - tentative)
August 27	Zoot Ranch Fun Fly & BBQ (tentative)
September 23 - 25	Fall Follies (tentative)
October 1	WOLF Ringmaster Fun Fly (tentative)
October 29	WOLF Fall Finale Fun Fly (tentative)

For details and confirmations go to flyinglines.org "where the action is" section

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(2-23-2022)

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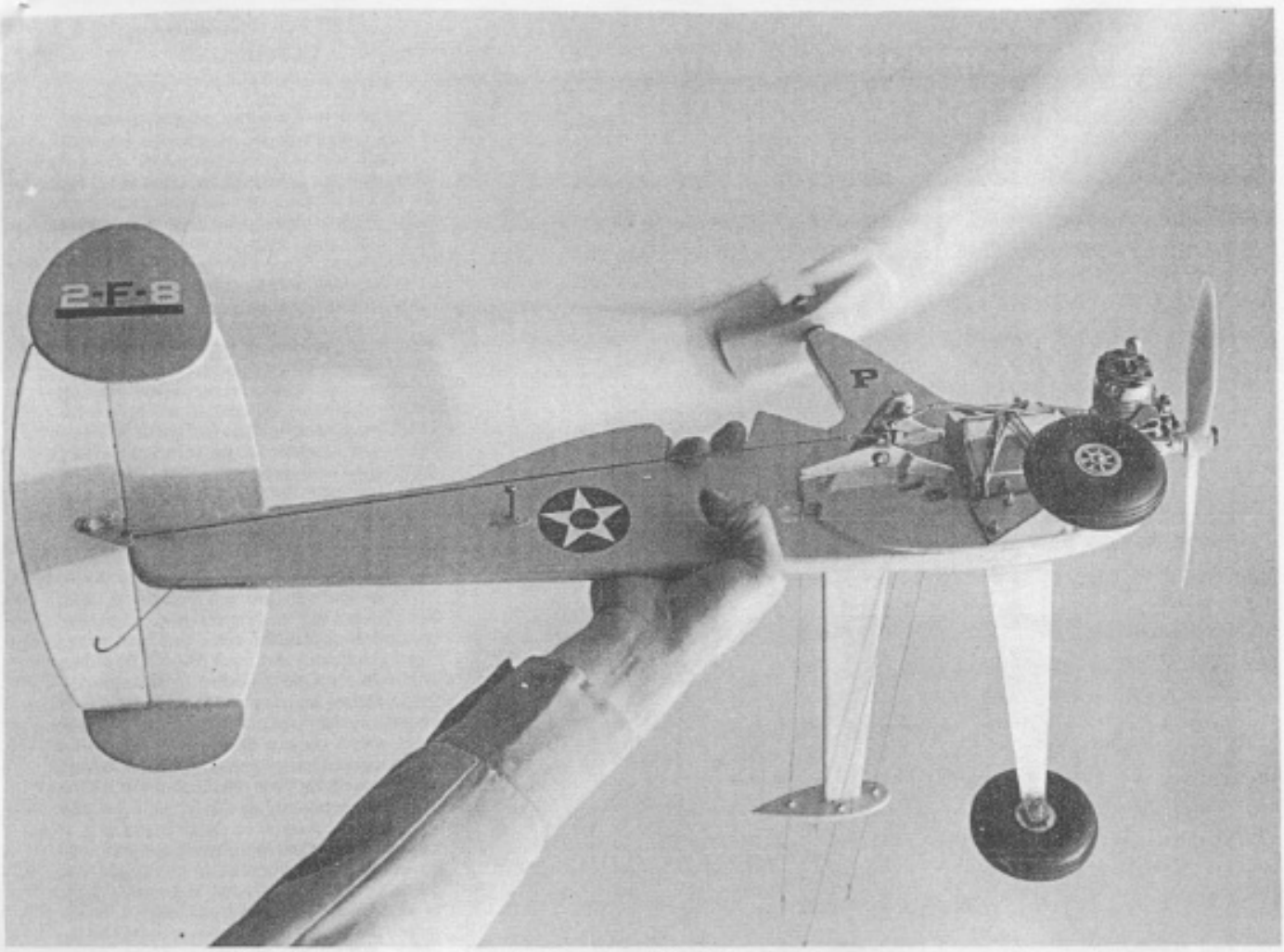
Please notify the editor of any changes!



Doesn't take too much wind to get the free spinning rotor to turn as can be seen in this photo of Otto being help up and into the breeze.

OTTO the Giro

BY DICK MATHIS . . .Fast Richard has come up with a winner with little Otto, the cute rotary wing bird for Ukie! It's a pure auto-giro without a horizontal wing, and will give everyone a headturning thrill at the flying field. It's different, but not just to be different—how many free spinning wings does one see in a Ukie circle?

• Possession of an autogiro is not a thing to be undertaken lightly. For example, the kind of airplane one is seen with reflects on one's character. A modeler with an Indoor Microfilm job *has* to have a different personality from his counterpart with the 150 mph Rat racer. Similarly, a modeler who is attracted to R/C Unlimited Pylon racing *must* be different from the one who sits flipping the prop on his ignition powered Old Timer Free Flight. It is therefore safe to say that we are known by the airplanes we fly.

If the above is correct, what does that make a person who possesses an autogiro?

"Otto the Giro" is a *pure* autogiro (no vestigial wing) for U-Control flying. He was designed without a real understanding of why he should fly, and then, after a few flights, it began to dawn on me (another triumph of superstition and ignorance over science and rationality) that what happens is this: (1) the rotor spins *clockwise* (viewed from overhead), driven by the forward motion of the craft through the air; (2) the rotor is caused to spin by a *difference in the angle of attack* between the two blades; (3) the blades are set at *negative* (the reverse of what you would expect) angles to each other; (4) as a blade comes around in the same direction as the airplane it has a lower angle of attack than the opposite blade and therefore *less drag*; (5) this makes the forward moving blade continue around (because it has less resistance) and become the blade that is moving down-wind toward the tail; (6) because the blade has a negative angle relative to the other blade (which is now moving upwind), it presents its *underside* to the airstream as it retreats; (7) the air striking this blade causes both lift and very high drag, which makes it continue around.

So the blades lift whether they are on the upwind or downwind leg. Note that the airfoil is backward relative to the flight path when the blade is going aft, so this makes it less efficient than when it heads upwind. But the difference in airfoil efficiency (and relative airspeed) downwind is compensated for by the greater angle of attack, so both blades lift about the same and the craft flies level. The plane is rotation of the rotor is highly inclined (the ship flies tail low), so both blades are always flying at a high angle of attack even though they fly at a negative angle within the rotor's plane of rotation. All of this is obviously very inefficient, so the lifting area embodied in the rotor blades should have to be pretty large to support flight—right? Not really, because the lifting surfaces in the blades are going a lot faster than the airplane and, therefore, they generate a lot of lift for their size.

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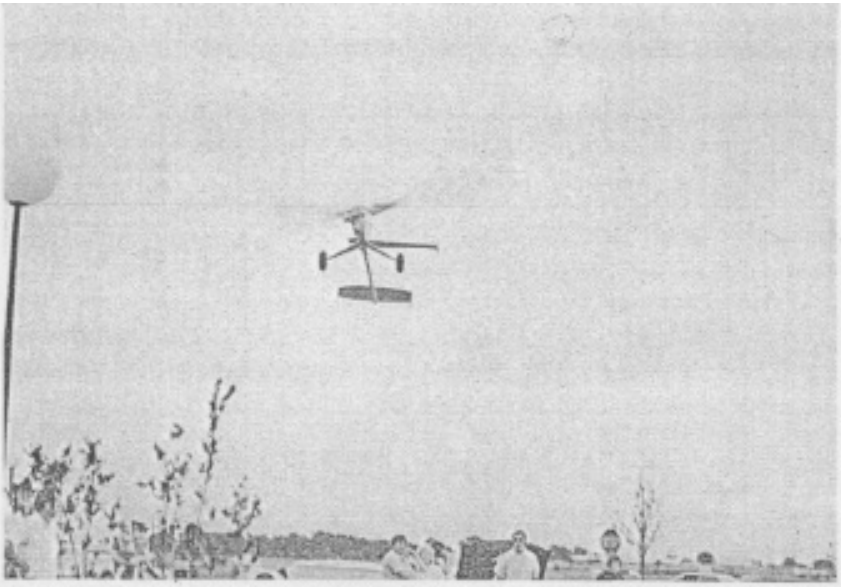


Here we have Otto humming along with its rotor singing its song—rotor must spin clockwise.

Close-up of the front end showing engine and tank installation—note throttle control.

Same view of front end but from a different angle to better show Roberts type bellcrank.

OTTO-THE-GIRO CONTINUED

So, here we are with a surprising amount of lift, courtesy of two little 15 inch "wings" furiously thrashing the air. But while they are generating all that lift, they are also generating an astounding supply of *drag*! This explains why Otto flies about 25-35 mph even with the motor screaming. It's rather like flying a conventional model in a sea of Jello rather than air—everything happens very slowly.

Otto can be landed and taxiied easily, even at full throttle. It is almost impossible not to fly smoothly because there is virtually no reserve maneuverability. (I am awaiting the first balloon-bust contest with great relish!) About all Otto does is fly around level, destroying the laws of physics and any air that happens to get in his way. He won't loop, nor even do wingovers, nor will he hover, although it should be possible to make an autogiro hang on the motor's prop, which we could call "hovering," but I have not tried this.

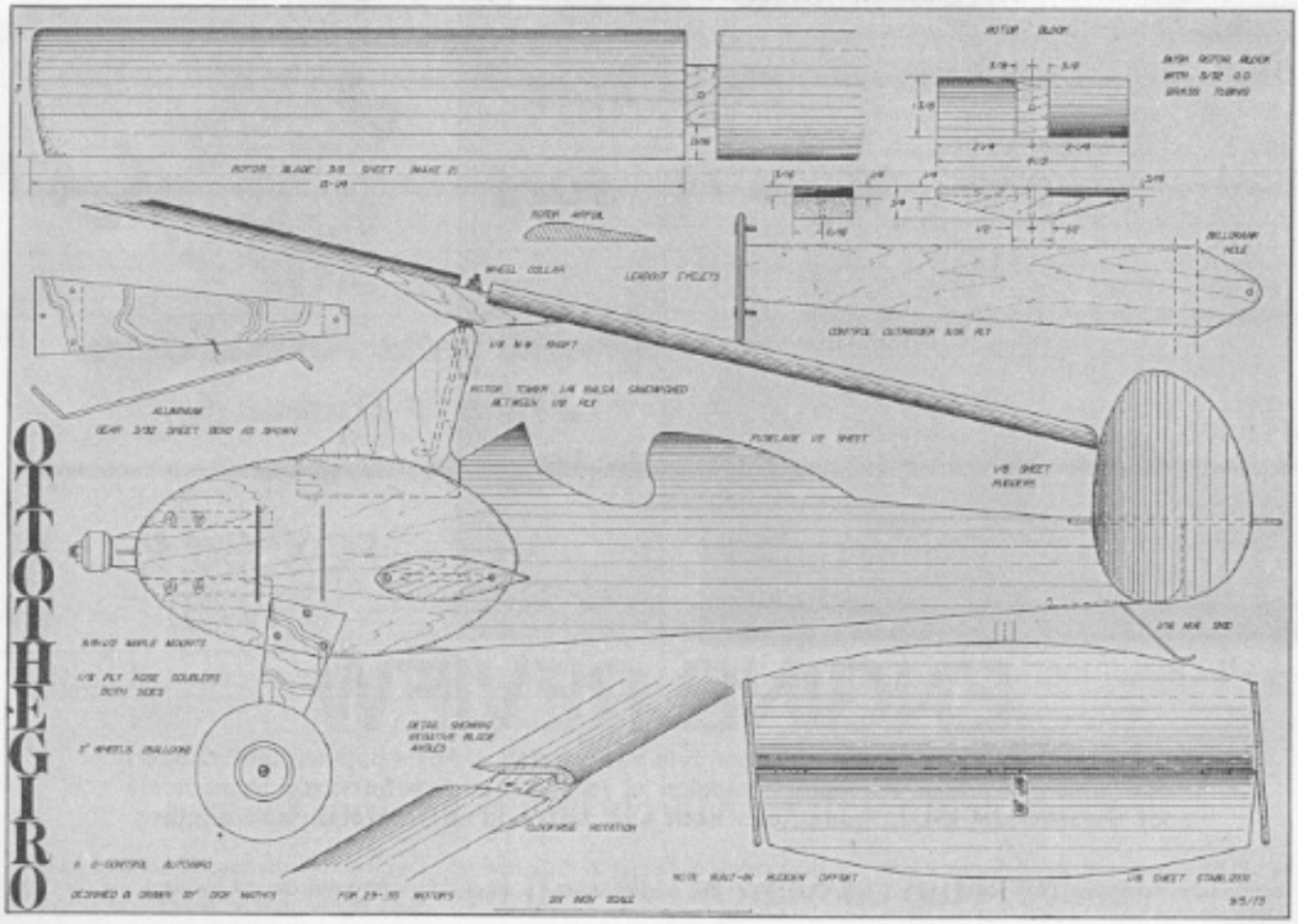
There has been some development work done since Otto was first flown, which has resulted in a simpler rotor hub and better flight characteristics. Rick Merryman built a duplicate of Otto ("Botto") with greater blade angles and the single axis rotor hub shown on the plans. Otto has a double axis rotor which permits the blades to move up and down as they go around. The idea was to give something like dihedral for stability. Rick's ship proved this double axis hub was unnecessary, which is good because it is harder to build and has already worn out. To be safe, the plans show a compromised blade angle right between the two ships. This angle is amazingly uncritical considering it determines the rotation speed versus the lift of the rotor. We've had no real problems flying either craft, but be forewarned that all we have done is fly level, not over 20-25 feet high.

CONSTRUCTION

Use stout wood because Otto will be around for a long time and receive a lot of knocks. A six inch wide slab of ½" balsa 24" long will make the body, or glue a couple of narrower pieces together and attack the outline with a jigsaw. If you splice two pieces together as I did, place the splice line where the control outrigger goes through the fuselage so you can cut the slot more easily. The fuselage is a conventional profile construction, save for the absence of a wing. The problem of where to mount the bellcrank is solved by mounting it on the outboard side of the fuselage on the control outrigger. The rotor tower is a sandwich of two pieces of ⅛ plywood with ¼ balsa between.

Before gluing up the tower, bend the rotor shaft and make a groove in the ¼ sheet core so the shaft recesses in it. Make sure the shaft makes the angle shown on the plans, since this determines the angle of attack of the rotor, and how the thing will take off and land. Be sure the tower is epoxied into the fuselage notch securely, because this area takes a lot of strain.

Anyone can make a good rotor assembly. Carve two identical blades from ⅜ sheet. The airfoil shape is not important, but having the blades pretty much equal in area, airfoil, and weight is important. Take a piece of pine (that's what I used), spruce, or any other



reasonably hard wood to make the rotor block. Lay out the basic shape and drill the 5/32" hole in the center exactly perpendicular in all planes. (In other words, drill it *straight down*.) Then try to carve the angles in the top (where the blades glue on) as equally as possible. Even if you blow it and don't get everything just right, it's still going to fly—it just may wobble a little bit. As an example, I built Otto's entire rotor in half an hour, so it can't be very precise—yet it works fine.

Don't forget to insert the 5/32 O.D. brass tubing bushing (it should be ¾" long) in the hole in the rotor block. This bushing fits nicely over the ⅛ music wire shaft and gives a smooth-spinning rotor. When the blades are glued to the rotor block, make sure they have no dihedral and are not swept back or forward.

The twin rudders give added rotor clearance so a larger diameter blade can be used. They are both offset to give line tension. When you install the pushrod in the elevator horn, make sure it gives at least 30° up and down control.

I used an aluminum landing gear, but a ⅛ music wire gear will work fine. Be sure to position the wheels well forward to prevent noseovers, and take care to have free rolling wheels with tires that won't come flying off while taxiing. The huge wheels help absorb the shock of those landings I mentioned above; in addition, they don't trip over pebbles.

Motors aren't too critical. Anything that sounds like a .29 or .35 (even a .19) and can turn a 9-6 prop will probably work. I used an O.S. .35 with throttle and Roberts three-line control system so I would be able to land at will and taxi to a stop at air shows, plus maybe hover (more like the old sabre dance). The fuel tank doesn't have to be an aerobatic type, and for once, you don't have to worry about getting it mounted exactly on the motor's centerline because it won't be flying inverted.

Note that the leadouts run from the bellcrank through holes in the fuselage and out to the teardrop-shaped guide at the end of the outrigger. Be sure the pushrod to the elevator can't flex enough that the elevator returns to neutral under the blast of air flying at top speed. Also be sure to offset the engine with a couple of washers under the front of the mounting lugs. At the slow speeds Otto flies, line tension depends on thrust offset and rudder offset.

Note that the rotor is held onto the shaft with a normal landing gear collar, which permits it to be removed easily. Two washers on each side with a little machine oil give a free spinning unit. Once the whole thing is painted and decorated, the only thing left to do is balance the rotor by holding the ship in front of a large shop fan and sticking pins in the tip of the blade that seemed light. I did this until the blades spun pretty smoothly, but I never have eliminated all vibration. A simple static balance probably will work as well.

FLYING

All you do is crank it up and let it go. It isn't necessary to give the rotors a spin before launching. There will be a take off roll of a lap or two while the rotor gains speed, and then you simply give up control until it is airborne. Do not fly too high at first (not over 20 feet high) and be cautious in feeling out the controls. Otto is very sluggish in control response, so the best thing is to fly conservatively until you get used to it. You will find it possible to fly inches off the ground lap after lap and to taxi at full speed. Toward the end of the flight do not fly over one or two feet. I guarantee Otto will not glide! If you are caught higher than one or two feet when the motor quits, be prepared for some damage.

I am positive Otto could be improved by changing the angles of the blades and thickening the airfoils, or maybe adding a third blade. A smoother bearing assembly would help, too, and I suppose I should feel guilty that I haven't indulged my curiosity to experiment. But the original purpose was to see if I could make an autogiro fly, which has been achieved. Otto makes people happy at air shows or just puttering around in the park, and that makes it worth while. ■

McMinnville Aircraft Modelers

Swap Meet

March 19 , 2022

Yamhill Valley Heritage Center
11275 SW Durham Ln
McMinnville , Oregon
97128

On Hwy 18 West of McMinnville

This will be an indoor event and all covid rules at the time of the event will apply

Vendor setup will be March 18th from 4pm to 7pm

Vendor setup on March 19th will be 7:30am to 9am

Swap meet opens to public 9am to 2pm $3.00 entry fee per preson

Wall tables are $30 per table	Floor tables are $ 20 per table

Contact info

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www.mcminnvilleaircraftmodelers.com

Current covid rules will apply , as required at time of event .

Western Oregon Control Line Flyers
Annual General Meeting

11:30 AM, March 26, 2022

Meeting place will be at the Holiday Inn hotel on Market Street in Salem, in the "Clear Lake" meeting room. Directions: I-5 exit #256 onto Market Street heading west. The hotel is about two blocks west of the freeway interchange.

Lunch offerings off a special menu will include salads, plus hot and cold sandwich plates. Cost is twenty dollars and includes a selection of beverages and pastries.

AGENDA

Introductions
Club officer reports
Activities schedule
Flying field maintenance
Misc. presentations
Door prizes!!!!!
Socializing
And any other business deemed worthwhile

Please let us know ASAP if you will be attending so we can properly plan details for this event. Guests are also welcome to attend!

For more information contact:

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