

NEWS OF NORTHWEST CONTROL-LINE MODEL AVIATION

1073 Windemere Dr. NW, Salem, OR 97304

Editor: Mike Hazel

SEPTEMBER/OCTOBER 1996

ISSUE #134

In this issue: Scale, by Fred Cronenwett, Zoot's Mixture, Round & Round by John Thompson, Favorite Planes by Jim Cameron and a few other things.

Greetings! Yes, we are almost overdue for an issue, this time we go for a small one. Next issue will have cover date of November, and should be out by mid-month.

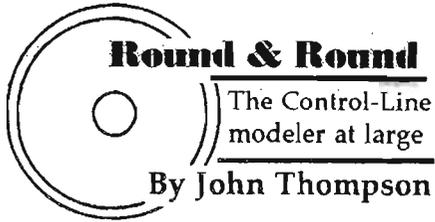
As you receive this issue, the NW contest season has concluded. Next month's issue of FL will have all of the late season contest results, plus the year-to-date competition points standings. Unless some meet pops up at the last minute, the standings should be good for the year.

Ye Olde Editor attended the Raider Roundup in Kent, Washington last month, and a few editorial type comments are appropriate. This meet has enjoyed some glory days in the past, with good entry levels, plenty of events, nice awards, and good management. Unfortunately, in the last few years things have been a bit up and down. Early in the year I heard that this meet was going to be returned to its former prestige status. I don't think it came off this year.

One of the critical factors in the success of a contest is publicity. At FLYING LINES contest calendar central, we never received any up to date information, despite requests and numerous hints in the newsletter. Even just before the meet, flyers had not been mailed. What happened? What I heard was that the AMA sanction had not been taken care of early in the year, as was thought. The contest flyer mailing kind of fell into the same category. I guess this was a case of assuming someone else was carrying the ball.

Attendance was so-so, and no doubt the marginal weather hampered a few would-be contestants. This was evident at the speed circle, especially. The Combat turnout was not bad, but only because a last minute phone campaign let everyone know what was happening. I did not get a feel for the Stunt entry level, but since the Seattle Skyraiders are somewhat of a stunt club, they would show up. Maybe this has something to do with things now. I remember when the SS had what I perceived to be a more diverse base of disciplines, and seemed to be more attuned to the needs of all events and organizations. However, fun was had, the officiating was good. And hats off to Bob Emmett for hosting the Saturday nite affair, when the banquet meeting site fell through.

Readers, your comments are invited.....



Round & Round

The Control-Line
modeler at large

By John Thompson

Modeling thought for the month:

"It requires less energy to take an object out of its proper place than to put it back."

— Macpherson's Theory of Entropy

Model Builder: RIP 1971-1996

MANY of us recall our youth in the model aviation hobby in terms of the magazines that we grew up on, in the modeling sense.

For me in the early 1960s, it was *Model Airplane News*, which was about evenly divided in those days between control-line, free-flight and that other kind of modeling. The monthly CL column was called "Round & Round," and this column's title is an homage to that heritage. The magazine even published articles on how to build kits. I remember a several-page spread on how to build a Ringmaster. We kids ate this stuff up. A whole magazine devoted to what we did for fun! Older guys remember *Air Trails* and some of the other classic mags. For me it was *MAN* and *American Modeler*.

When I returned to the hobby in the 1970s, the picture had shifted, but there were a whole new batch of magazines to keep us in touch with the hobby worldwide. *Model Aviation* was starting up, *Flying Models* was a strong CL publication, and *MAN* had not yet gone completely to thumb twiddling. And there was a spunky magazine called *Model Builder*, that printed its logo sideways, perhaps to match the vertical orientation of its West Coast feel.

MB developed into a pretty good all-round magazine and I was proud to be invited in the mid-1980s to take over the monthly CL column from *Flying Lines'* Mike Hazel, my predecessor. The CL column had a proud history, also due to the long service of Dan Rutherford as Mike's predecessor.

Through the nearly 10 years from 1987 to 1996, I tried to keep the CL column true to my vision of the CL community: *Not* a community of stunt fliers, or combat fliers, or racers, etc., but a community of *control-line model aviators*, with

common interests and goals. I always believed that we were too small a group to fragment. Thus, the column seldom mentioned PAMPA without also mentioning MACA and NCS and NCLRA and NASS, etc. We all hang together or we all hang separately, I believe.

Response was always good. In 10 years of writing for *MB*, I can remember only one negative response to an article, which was a hurricane of criticism directed from a blustery east coast stunt flier and his buddies who objected to my quotation our Northwest guru's innocent observation that his plane (which had just won the world championships) was a little better flying in the wind than a particular Eastern favorite. Aside from that, 10 years and all positive feedback. If only real life were like that!

But now, as many of you will have heard by now, *Model Builder* is dead. It was the victim of rising paper costs and other pressures. A potential sale fell through, and the magazine closed its doors, fired its friendly staff and suspended publication.

If you don't think CL fliers need to hang together, consider this: Five or six years ago, while Bill Northrup was still publisher, he told me that he was under severe pressure from RC-oriented advertisers to eliminate all the CL and free flight editorial content from the magazine, which the advertisers felt tainted the content. They didn't want to pay to advertise to non-customers. We all know how idiotic such thinking is in a hobby that has so much crossover between the disciplines, but it's a hard thing for a publisher to face.

Through it all, Northrup and later Gallant Models steadfastly backed CL and FF — never was there a hint that our sectors would be cut loose. Could that have been part of the reason for *MB's* downfall? I don't know.

But I do know that we have to stick together as hobbyists and support one another. If stunt fliers don't help out the speed fliers, and the combat fliers don't look out for their racing pals, and the racing guys don't support the carrier guys, we all go down the tubes.

The good news (I hope you think it's good news) is that the death of *MB* will make it possible for me to devote more of my time to helping boost the content of *FL* through this column and other features. I hope to begin doing some of the former work I did for *MB* in these pages.

I hope to begin adding product notes;

technical tips, communications network guideposts, news from other regions and other random bits and pieces from the huge MB file and from what continues to come in via dozens of newsletters, online services and the mail.

And I want to hear from you. Send some feedback, some ideas, comments, possible topics, etc.

Remember, too, that *Flying Lines* is your nearest and dearest link to the world of CL flying, particularly as it relates to the Pacific Northwest. Experience over the past 17 years or so has proved that the Northwest fliers need such a publication. And that publication needs you. Here's how you can help:

- Write articles, letters, hints, tips, comments, etc. Send them to Mike at the FL address. They'll be published.

- Get your modeling buddies signed up. FL is an independent publication that must have paid subscriptions in order to perform its vital service as a communications network. Make sure everybody in your flying group is a subscriber.

There are reasons to do this other than to just keep the newsletter going: The newsletter is what keeps people informed. It's why people know to come to your contest, for example. Without it, we are just a bunch of isolated individuals flying, so to speak, in the dark.

- Be sure to keep the newsletter up to date on standings, records and other regular features. These are popular features with many of the Northwest fliers, but they depend on the help of contest directors and participants to keep us up to date. Remember, placings through fourth place, and the number of entries in each event.

- Most of all, support your fellow modeler. We're all control-line model builders, whether we're building toward the perfect hourglass or the 200-mph club. We need to help keep each others' lines tight.

Send comments, questions, and topics for discussion to John Thompson, 2456 Quince St., Eugene, OR 97404...e-mail JohnT4051@aol.com.

**"You cannot legislate
mediocrity"**

..... zoot zoomer



ZOOT'S MIXTURE

In the world of competition, rules of the game are something that we all must deal with. And many competitors deal with them in different ways. You've got your lawyer types who are always looking for a loophole. These guys like to steer around what would be called the spirit, or intent of the law, and want to nitpick what is the letter of the law. And sometimes you have the other extreme, what I would call a rulebook ignoramous, you know the type: shows up with planes or equipment that doesn't fit, but wants to play anyway, acts surprised that rules even exist. (By the way, you do have a current AMA rule book, don't you?)

There is also another type of competitor who approaches the rules game in another way. This is the guy who wants to change the event "to make it easier", or "make it fair for the beginner". This guy is normally well-intentioned, but unfortunately slightly misguided. In far too many cases, this individual is an armchair legislator, that is, he is not an active participant to the degree that all the nuances of the event are fully understood.

The concept of events for the novice competitor is just fine and dandy, but unless the seasoned competitor is somehow restricted from participation, the veteran will usually win. This is the nature of competition. If the novice competes with the pros, the best thing they can do is to approach the experience as a learning one. All the present competitors have "paid their dues", having been at the starting end of the learning curve at some point.

I remember back a couple of rules cycles ago, when someone had proposed that the Goodyear (Scale Race) event be split into two classes. One of the classes as I recall, had some rather odd equipment restrictions, but the real kicker was a "speed limit"! Can you imagine putting a speed limit into a racing event? The next logical step would have been to require incompetent pitmen to further slow things down, to help "even the playing field". Sorry folks, but you cannot legislate mediocrity.

So, having said all this, what does the Zoomer suggest? He suggests to the armchair legislators to focus their energies not in messing with rules, but with actually learning and becoming proficient in an event of their interest. And then they can help the novice competitor...like most of the pros already do.

Scale - Start with Good documentation

By: Fred Cronenwett

A great Scale model starts with great documentation. In fact some pilots won't even consider building an scale model airplane until they have the entire documentation package assembled. This normally includes a 3-view, Proof of color and markings and other supporting data. The documentation folder you give the judges can make or break you during the Static judging. Except for Fun Scale, 50% of your total score is the static points. All of your static points are derived from your documentation folder as the judges determine how faithfully you reproduced a miniature version of the full size aircraft being presented.

The entire purpose behind scale is to build a exact duplicate of one particular airplane that looks and flies like the original. Once you have chosen what kind of airplane you want to model, your next job is to locate enough documentation on **one particular airplane** that strikes your fancy. The ideal documentation package will include color photographs, 3-view and color chips, however color chips not always possible. Some projects such as original WW-I fighters will only have black and white photographs available. To really do well, especially in Precision and FAI scale competition is critical that you can look at and touch your subject aircraft.

For the purpose of this discussion lets say we have selected the Hawker Sea Fury single seat fighter. Our first stop will be our local hobby shop that specializes in 1/72 scale plastic models. While I am not interested in the plastic models, these hobby shops have a large number of books and magazines about full size aircraft. Also look for book stores or mail order outfits that specialize in aviation books such as Zenith, or Squadron. If you are building a sport scale model you may only need to pick up 1 or 2 books on your subject aircraft. But now we need to choose a paint scheme to copy. One way is to locate a restored Hawker Sea Fury and duplicate that paint scheme down to the N-number. Remember you can not change any number or marking that is on the full size aircraft. Do not change the N-number on the full size aircraft to your AMA number on your model. Believe it or not this is a common mistake!

You could visit every airshow in the United States until you find the best looking Sea Fury but this is asking a bit much. Did you realize that there between 15 and 20 flyable Sea Fury's on the national register? There are also about the same number in museums spread around the country that have been restored for static display only. Anyone of these examples would be a good candidate for your scale model. While at the Oshkosh EAA Fly-in this year I found three Sea Fury's on display just begging to be photographed. One of them belonged to Ellsworth Getchell who is very active on the airshow circuit. When you find your subject aircraft, grab 2 rolls off film (36 exposure each) and start shooting. Start with a 8 point walk around which will include the left and right side of the aircraft and shoot the details. Be sure to take a photograph of the landing gear, propeller blades, small markings, elevator, etc. When shooting the landing gear be sure to use the flash so that the details can be clearly seen. You will be referring to these photographs as you build your model so keep them handy.

The odds of finding a Sea Fury locally can be very remote, so this where Bob Banka's Scale Model Research will help you out. Bob has the largest collection of documentation photographs and will sell prints from his original negatives. With over 5,800 photo packs he has 13 single seat Sea Fury's available. While a Piper Cub can be found at almost any airport, the unique and rare airplanes that we enjoy modeling are rarely in our back yard. Call Bob and order his catalog to see what he has available. His catalog also lists over 33,000 3-views that will also be required for your documentation package.

Now pull out that 3-view of the Sea Fury and the Photographs of Ellsworth's airplane. You will be building a duplicate of Ellsworth's airplane that means if he modified his plane, you need to modify your model to match. Many restored WW-II fighters have been "modernized" which means that will be differences between the restored version and the wartime version. Ellsworth has removed the tail hook from his plane and faired in the bottom of the rudder. And he has also removed the support structure that normally behind the pilots seat. Other Sea Fury's have been modified to accept an American radial engine, the difference being that the American engine will turn a four blade propeller Counter-Clockwise, while the original British engine turns a five blade propeller Clockwise! These changes will have to be incorporated into your model. Fairing in the bottom of the rudder changes the outline of the model so you will have to clearly point this out to the judges. The photograph will take precedence over the 3-view in cases like this.

Scale Model Research
Bob Banka
3114 Yukon Ave
Costa Mesa, CA 92626
(714) 979-8058

National Association of Scale Aeromodelers
Attn: Bert Dugan (call for membership info)
11090 Phyllis Drive
Clio, MI 48420
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FAVORITE PLANES

by Jim Cameron

Being somewhat sentimental, I have had a few planes that meant a great deal to me. My first 1/2A was a Carl Goldberg Li'l Satan. My first .35 sized plane was a Goldberg Buster. Another favorite was the throttle stunt ship that Mike mentioned in his favorite planes article. But, my favorite plane is an odd little Knight Twister.

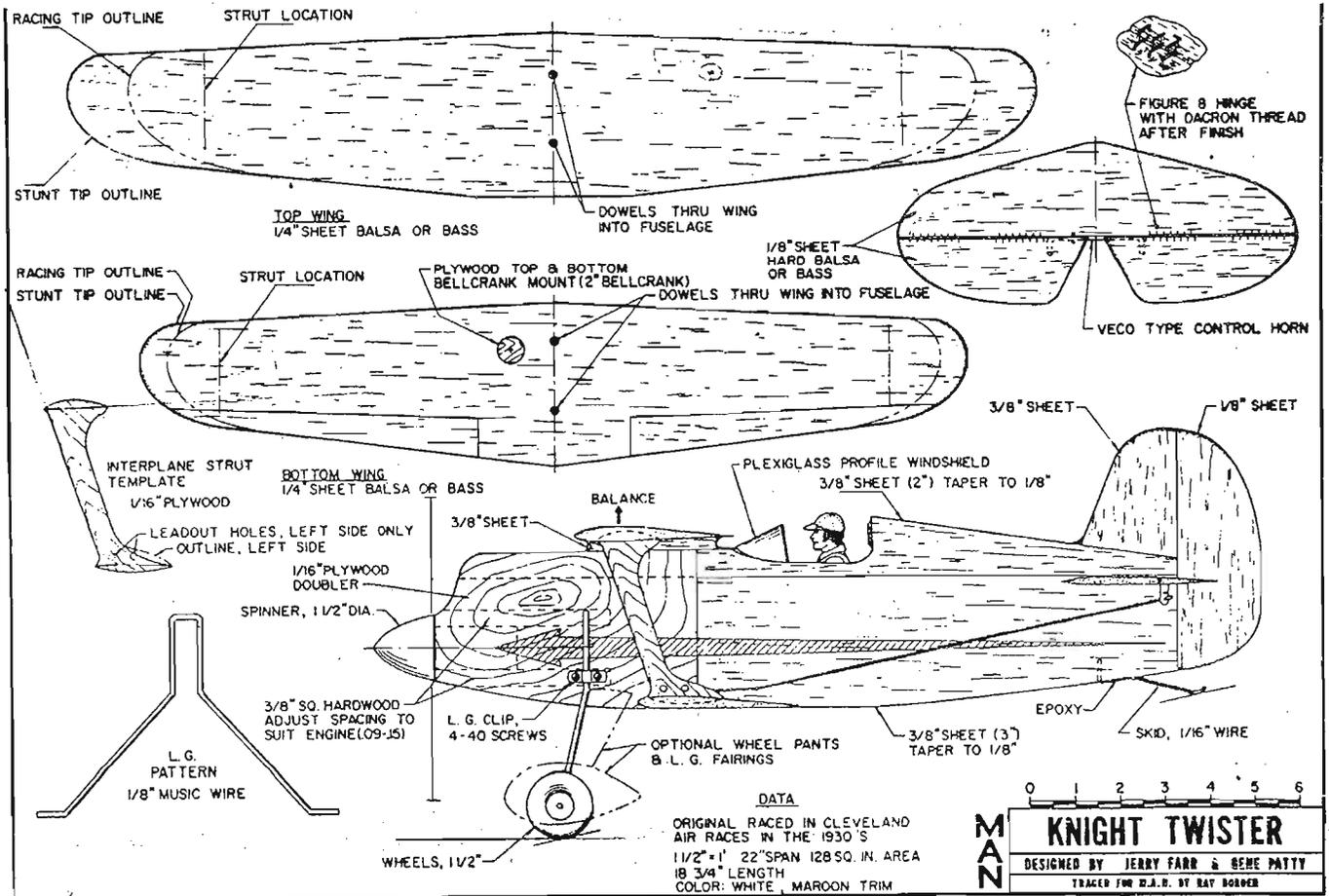
It all started in a shop class at Seaside High School about 20 years ago. An upper-classman found out that I had a model engine part that he wanted. He had a Cox Medallion .09 engine. The trade was made, and Dave Green was informed that I was looking for a plane to build for the .09. A short time later Dave showed me the Model Airplane News magazine with the Knight Twister plans in it.

Now at the time, I didn't know about airfoils and lift. I did not know that a Goodyear racer wasn't going to stunt. Race planes were not expected to do loops by most people. Well, not knowing any better I wanted to scale up the planes from the magazine. Dave again helped with this. My Knight Twister was built and came to be known simply as "The Bipe". It soon had quite a reputation that I know it deserved. However, it was not for it's beauty or the stunt pattern it could perform. I was having a great time, and no one could quite figure out why. Remember, I didn't know anything about the .09, so I put a 2 ounce tank on the plane. This was interesting, because I was getting about 20 minute flights. This turned out OK, because our field was large.

I could start the plane, get a launch, and run down field. This would let someone put a flight up on the main circle. Then, while flying I would run back to land on the main circle. You might wonder what in the world would keep my interest. The plane would stall. It was a blast! You could hang the plane on the prop, then pull it inverted or upright. One day Dave flew the plane and that was all it took, he was hooked. He found out about what can only be described as tumble loops. This took place when you put the plane into a stall and let it lumber vertically to about 30 degrees, then gave full up. The plane would loop around its own axis and tumble straight down. If you timed it right, the plane would do three tumble loops before it crashed.

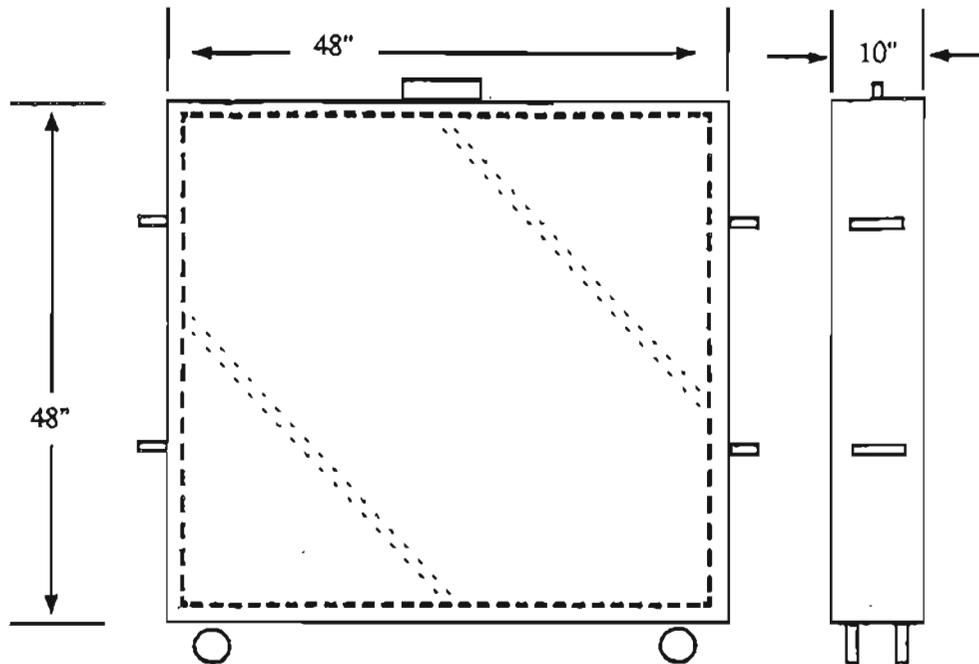
I knew "The Bipe" had reached some sort of acceptance when we were up in Portland for a contest. After the competition I thought I heard an engine that was familiar. I looked over to see Dave flying my Bipe for a crowd of people. He had stolen my plane!

I have now built three Knight Twisters. As I said, I am somewhat sentimental. If you measure fun by the ounce, this little plane ranks right up with any other plane I have ever had.



This page was "mooched" from the Northwest Fireballs newsletter, Alice Cotton-Royer, editor.

Airline Travel Box for Planes Up to 56" Wingspan



Materials:

- 48" x 48" Birch plywood top and bottom
- 1" x 10" Alaskan Yellow Cedar sides (trim on table saw from 1" x 12" stock)
- 1" x 2" diagonal reinforcing strips on top and bottom
- (use strips trimmed from 1" x 12" sides)
- 5-Metal handles
- 4-2" furniture grade swivel casters
- #6 x 1 1/2" Phillips head screws for removable top
- 1 1/2" finishing nails for side and bottom assembly
- Titebond glue for side and bottom assembly
- Varethane synthetic finish

This easy-to-build travel box meets airline regulations (total dimension of less than 115") and is specially designed for the needs of classic and old time stunt contestants who often fly a variety of designs. Heavy furniture casters and five handles ensure that it can be maneuvered and lifted with ease. Planes are placed diagonally inside the box and may be secured with cuphooks and rubber bands, or simply packed with foam rubber. Towels, an empty fuel pumping device, small toolbox, etc. can be strapped to the sides of the box using cuphooks and heavy rubber bands. Caution: Never ship fuel or other inflammable liquids on any airline!

Don McClave
Portland, Oregon

Hi, Mike,

Just received your Flying Lines issue #133, and noted an error in the article by Orin Humphries. The article states incorrectly that the stiffness of a beam is proportional to the fourth power of the height, when in fact it is proportional to the third power. Maybe this sounds pickey, but I would hate to have someone design a model using the wrong formulas when there is such a significant effect.

First of all, the stiffness of a beam is inversely proportional to the deflection caused by an applied load. According to the deflection formula,

$$\Delta_{max} = wl^4/8EI \quad (\text{See Beam Diagram})$$

The section property of the beam (I) is in the denominator of the formula, which is the same as saying that the stiffness of the beam is proportional to I. According to the section property formula,

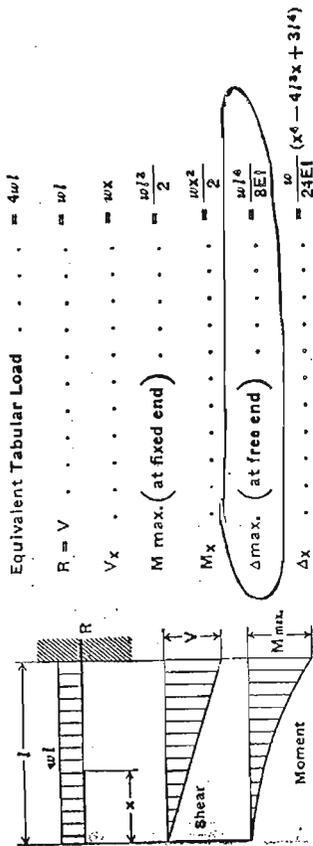
$$I = (BH^3 - bh^3)/12 \quad (\text{See Properties of Cross Section})$$

Note that I is proportional to H³, not H⁴. I hope this helps clear up some questions others might have.

Thanks,

 Paul Rice

19. CANTILEVER BEAM—UNIFORMLY DISTRIBUTED LOAD



5-38

MECHANICS OF MATERIALS

Table 6. Properties of Various Cross Sections—(Continued)

Section	Moment of inertia	Section modulus	Radius of gyration
Equilateral Polygon $A = \text{area, (see p. 1-39)}$ $R = \text{rad circumscribed circle}$ $r = \text{rad inscribed circle}$ $n = \text{no. sides}$ $c = \text{length of side}$ Axis as in preceding section of octagon	$I = \frac{A}{24} (6R^2 - a^2)$ $= \frac{A}{48} (12r^2 + a^2)$ $= \frac{AR^2}{4} \text{ (approx)}$	$\frac{I}{c} = \frac{I}{r}$ $= \frac{I}{R \cos \frac{180^\circ}{n}}$ $= \frac{AR}{4} \text{ (approx)}$	$\sqrt{\frac{6R^2 - a^2}{24}} \approx \frac{R}{2}$ $\sqrt{\frac{12r^2 + a^2}{48}}$
	$I = \frac{6b^2 + 6bb_1 + b_1^2}{36(2b + b_1)} h^3$ $c = \frac{1}{3} \frac{3b + 2b_1}{2b + b_1} h$	$\frac{I}{c} = \frac{6b^2 + 6bb_1 + b_1^2}{12(3b + 2b_1)} h^2$	$h \sqrt{\frac{12b^2 + 12bb_1 + 2b_1^2}{6(2b + b_1)}}$
	$I = \frac{BH^3 + bh^3}{12}$ $\frac{I}{c} = \frac{BH^3 + bh^3}{6H}$	$\sqrt{\frac{BH^3 + bh^3}{12(BH + bh)}}$	
	$I = \frac{BH^3 - bh^3}{12}$ $\frac{I}{c} = \frac{BH^3 - bh^3}{6H}$	$\sqrt{\frac{BH^3 - bh^3}{12(BH - bh)}}$	

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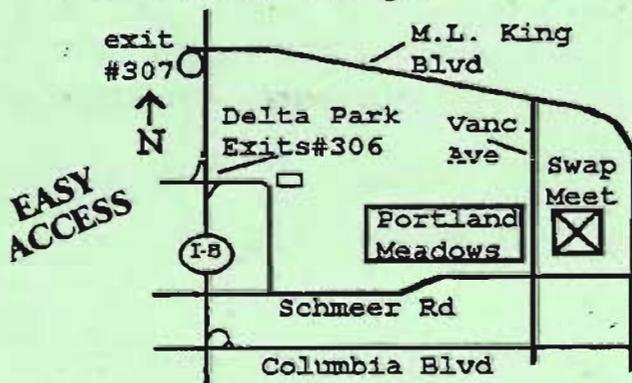


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