CENTRAL INDIANA AEROMODELLERS

INFORMER

FREE FLIGHT NEWS OF THE MIDWEST

** The Weather **
Doves that coo at night,
bring water before daylight!

- Editor -
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Round 'n Round..... Testing indoor prop & motor combos. - By Moe Whittemore

Last year, Agent **Jim Clem** sent me some pictures of an indoor prop test stand he built that used an electric motor to spin up the prop under test, with an attached pendulum/indicator system to measure relative prop thrust. I believe he got a relative required torque indication by measuring changes in motor current, at a given RPM. In essence, this was a static thrust stand for indoor props!

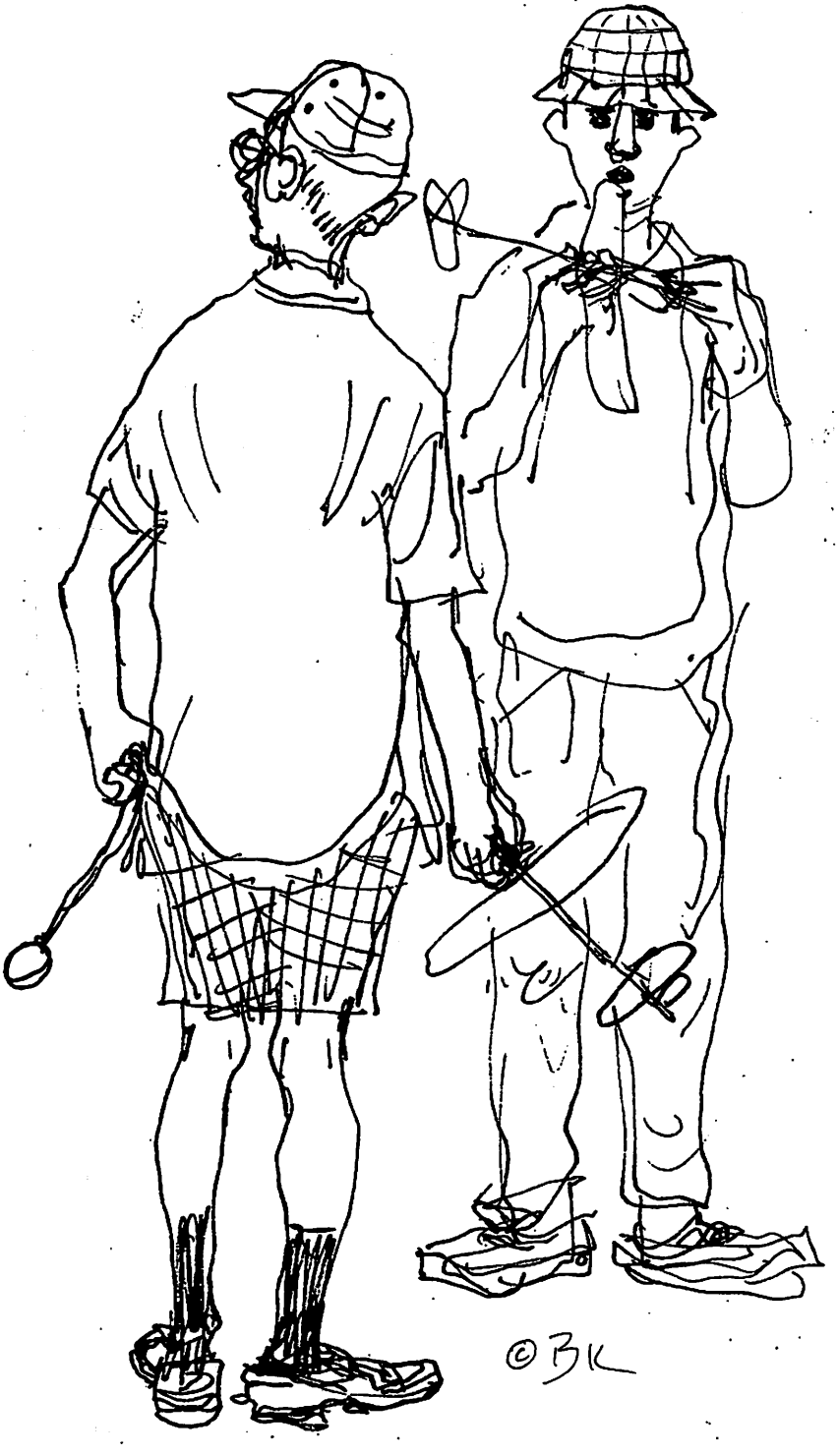
But later, Jim gave me a call stating that he wasn't getting good data - at least none that correlated to flight test results. He was suspecting that the whole system had to be moving to get realistic results. He's right! I then described a system to him that I built back around 1980 to measure improvements on my indoor prop/motor combinations.

If you have instant access to a good indoor test site, read no further - 'cause flight testing is still the best way to go! But if you're an occasional indoorsman interested in a good way to check out your prospective 'breakthroughs' while the idea is still fresh in your mind - and in the convenience of your own home - read on!

I don't claim to be the first (or last!) to try this test scheme. It consists of a rotating arm of about 7 ft. radius. At the end of the arm, the test prop is driven by a motor stick/bearing&drive-shaft/rubber width & length combination proper for the specific indoor class of interest.

But the item that makes good correlation with flight test results possible is a **drag plate** - *sized such that it provides (within 5 - 10%) the actual drag of the model at flying velocity.* Standard formulae can be used to size this plate to the class of model at hand.

(cont'd p. 4)



I received a report from the recently-completed F1D World Championships (Romanian Salt Mine, again!). The US team did quite well, with the following placings:

1.) John Kagan (92:16)
2.) Jim Richmond (92:10)
4.) Steve Brown (86:49)
8.) Larry Coslick (81:52)

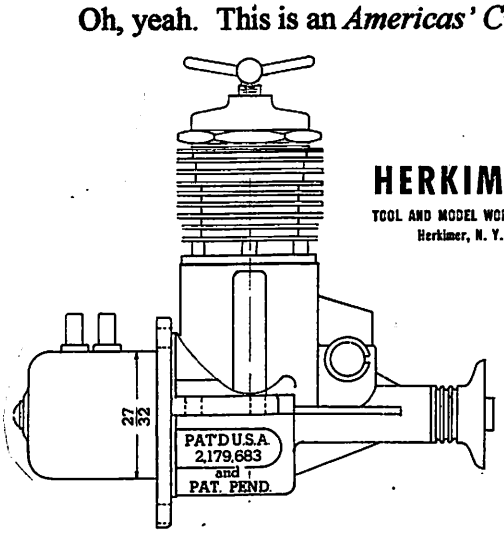
According to the report, Agent **Jim Richmond's** was the outstanding model, relying on an extremely slow climb to get the job done - taking about 15 minutes to get to the roof, compared with the other competitors' 8-10 min's. And Steve Brown's placing is amazing, considering all his models were wrecked in transit! "The contents of the box looked like they had been stirred with a stick" (his words)! He spent the 1st 2 days assembling 3 (barely) flyable models!

But the times hardly reveal the fact that the new rules have reduced motor mass from 1.0g to 0.6g, for this competition! Progress!!

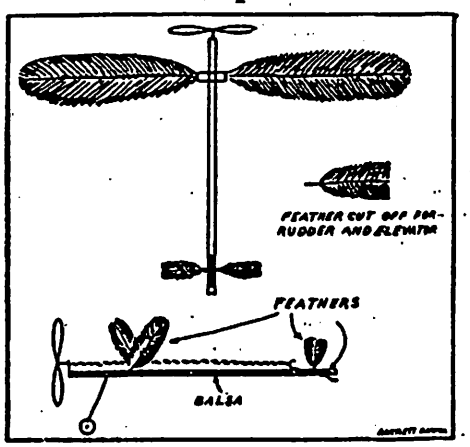
And this from Andy Barron: Seems like there'll be a kind of "make-up" contest for the blowout at the Wawayanda, NY contest held a few weekends ago. November 18-19 is when, and 'Barron Field' is where. If you need specifics, his email is *andrew.barron@yale.edu*, but this much is known: The field is about 2hrs from Allentown, PA. AMA Gas events, NosGas events, and Mini-FAI events will be Saturday. (They're holding most gas events on Saturday to minimize conflicts with the MECA Collecto on Sunday.)

Big FAI events might overlap both days to allow flexibility in response to weather conditions. Some Rubber events will be on Sunday, but OHLG, CataGL and P-30 will be held both days.

Oh, yeah. This is an *Americas' Cup* Meet.



Build a Featherplane—It's Simple



This is the ultimate in model simplicity. Get some feathers and try it.

From: POPULAR AVIATION, March 1933

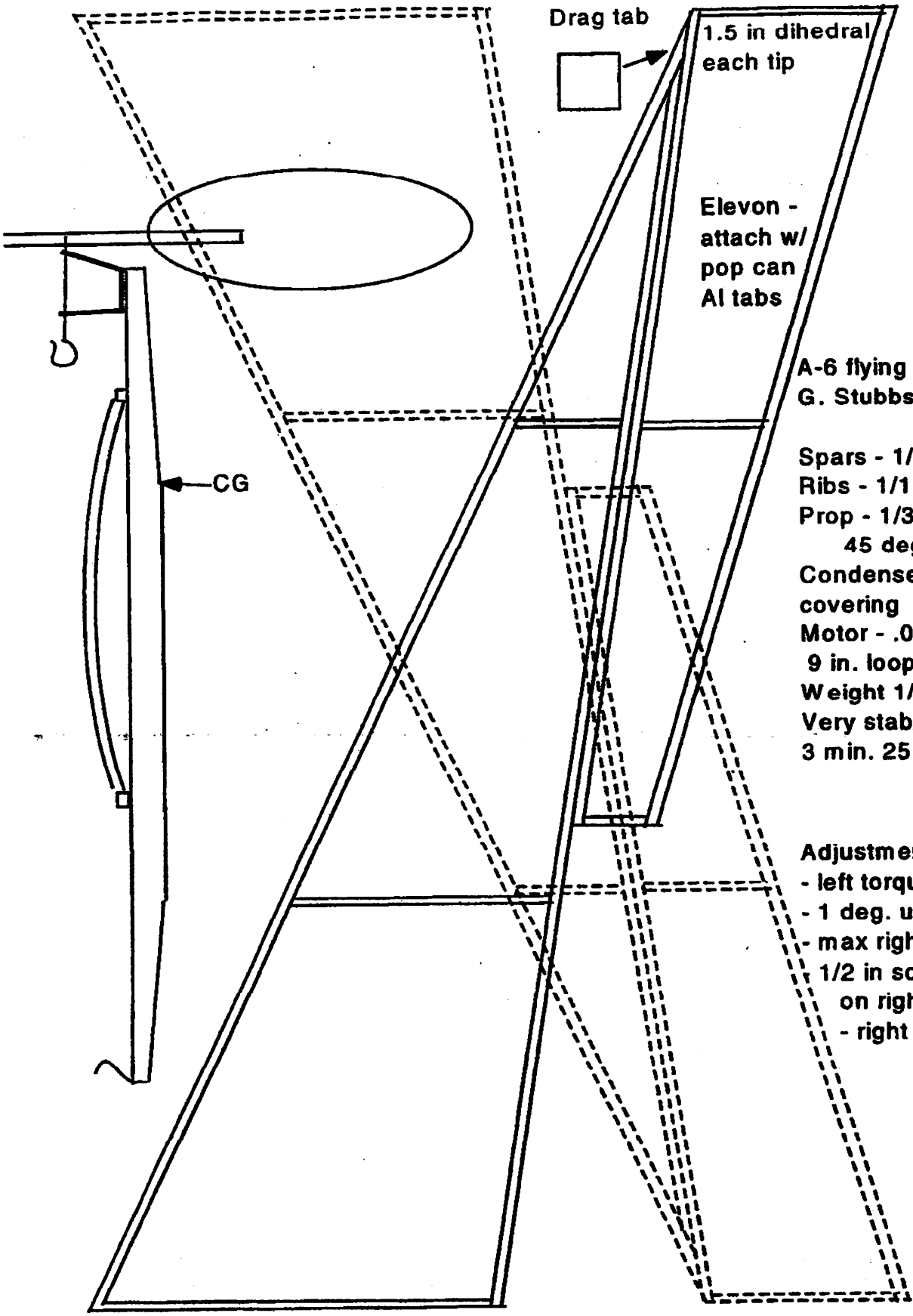
HERE we have a real novelty—a model with turkey feathers for the wing and tail. It is simplicity itself, having no ribs to cut nor any paper hanging to do after the wing is assembled.

This suggestion comes from Bartlett Harper, 706 Cemetery St., Natchez, Miss., who has designed a mighty clever little model. All that is needed is some stiff turkey or goose wing feathers, a balsa motor-stick, some wire and an 8-inch propeller.

The quills of the wing feathers are stuck into the motor-stick and are glued. For the elevator and rudder, the feathers are cut shorter than for the wings. Stiff wires for the landing gear struts, bearings for the propeller and you are all set. No dimensions are possible because of the variations in the feather sizes.

The plan on the facing page - looks like a lot of fun! It's an A6 class flying wing, stolen from the Aug '00 issue of that excellent publication, *Indoor News & Views*. INAV is the effort of Larry Coslick, Gene Joshu, Howard Henderson, Bill Martin, Steve Gardner and Roy White. (Whew! I wish I had that much help - ha!) Subscriptions run $9.00/year.

But the group is looking for volunteers to take over publication! If anybody's interested, contact Howard Henderson at 444 Bryan, St. Louis, MO 63122. Ph: (314) 822-3980. Email: h piet h@aol.com



A-6 flying wing
G. Stubbs, 5/00

Spars - 1/16
Ribs - 1/16 x 1/32
Prop - 1/32 sheet
45 deg
Condenser paper covering
Motor - .032 Tan II
9 in. loop
Weight 1/2 gm
Very stable flight
3 min. 25 ft ceiling

Adjustments:
- left torque roll
- 1 deg. up elevons
- max right thrust
- 1/2 in sq. drag tab on right tip
- right circle

(Round 'n round - cont'd....)

This drag plate (disc) is mounted on the opposite end of the rotating arm - but at about 5 ft. radius, to ease the disturbance of the airstream on the test prop. Confidence in the drag plate concept is gained when one notices how closely the velocity of the test specimen at the end of this rotating arm approaches that of the model's actual measured flight test velocity!

The arm itself was made of spruce, shaped to an airfoil section to minimize drag, then braced with fine wire (much like an F1D!) to keep vertical flex down. Ball instrument bearings helped keep the pivot drag as low as possible. Then the whole shebang was supported on a tall camera tripod!

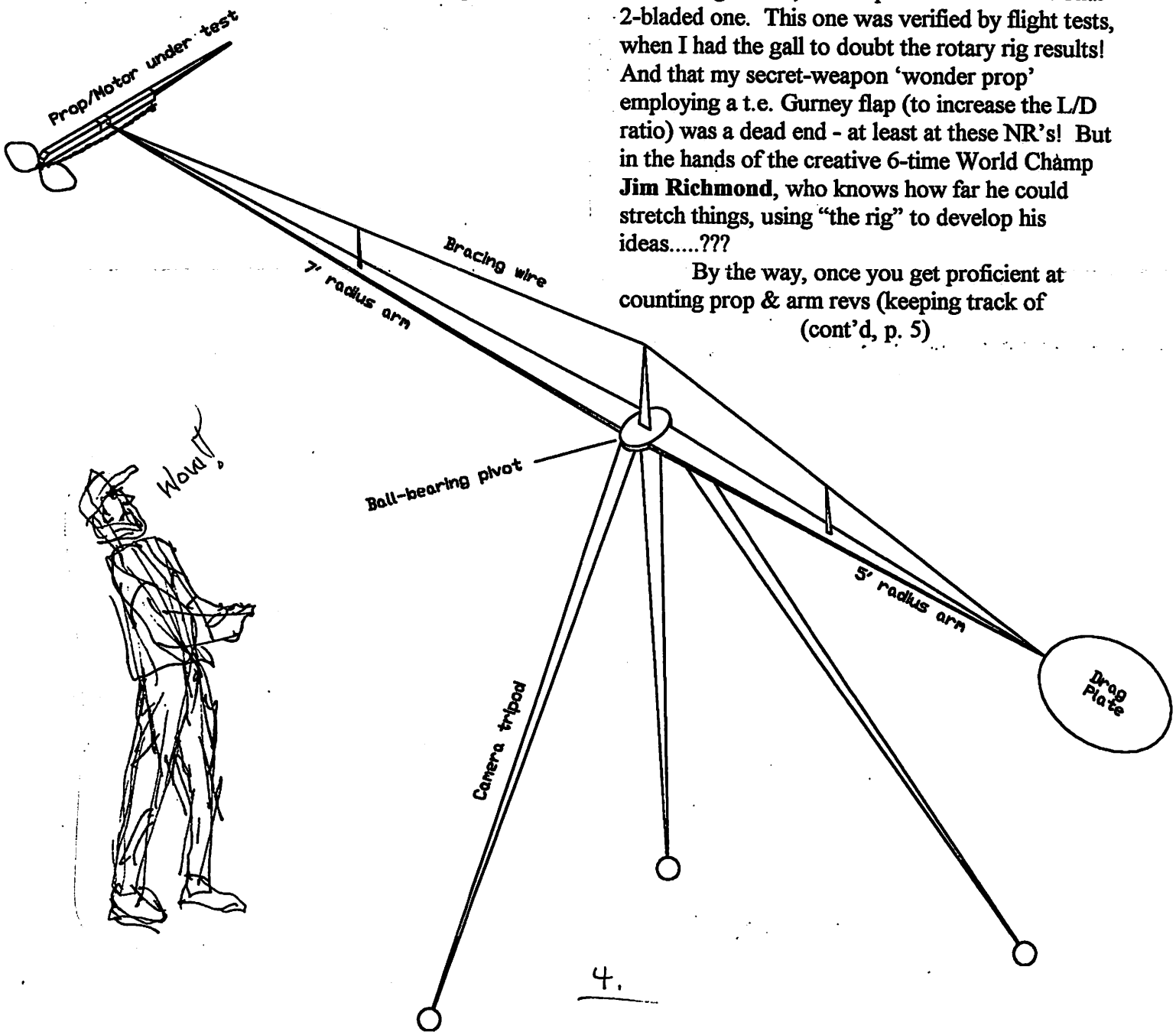
This completed the physical setup (see sketch).

Not to be overlooked is the fact that a real motor and motorstick is being used - and handled by the modeler. Good trainin'! ....and one is using <u>real</u> flying accessories, such as a winder, torquemeter, etc., and loading/let-off/change motor techniques - durn near real contest conditions! You'll even have to use your stopwatch to measure the results - and your eyes to count prop & arm revs!

I can't claim that the use of this test system made me a world-class indoor flyer, but it kept my ass out of embarrassment! It showed that my 4-bladed Manhattan Cabin prop would've cost me 15% in flight time, as compared to a conventional 2-bladed one. This one was verified by flight tests, when I had the gall to doubt the rotary rig results! And that my secret-weapon 'wonder prop' employing a t.e. Gurney flap (to increase the L/D ratio) was a dead end - at least at these NR's! But in the hands of the creative 6-time World Champ **Jim Richmond**, who knows how far he could stretch things, using "the rig" to develop his ideas.....???

By the way, once you get proficient at counting prop & arm revs (keeping track of

(cont'd, p. 5)



(Round 'n round, cont'd....)
"model" velocity, as it were), you can estimate when you transition from climb-to-cruise-to-descent. You then can adjust real-world parameters to avoid a too-fast climb, with the resulting 'rafter-banging' and risk of hanging. And one could use the more popular & recent 1/4, 1/3, & 1/2 motor combos to shorten the test time. But, the end result is that *the total rotational time of the rig is proportional to the efficiency of the prop & rubber combo being tested*, regardless of the estimations/extrapolations employed.

An aside..... Since we're dealing with a temperature sensitive power source, vary the ambient temperature of the room in which the rig is used, to get an insight into the effect of this variable on overall duration! It is a very significant parameter to put numbers on, knowing that it affects the properties of rubber - and thus the model duration in a given site. I logged the ambient temperature, and know it made a day-to-day difference when I was running my tests, years ago. Thus, it behooves one to normalize their data to a 'standard' temperature.....

I'll leave it to other creative individuals to instrument the system with rev counters, timers, etc., then interface it with the computer to simplify the data acquisition and data reporting process.

And I sure wish the computer was part of the picture when I first started messing with this system -'way back when! Best of luck! - Moe

Hints, Tips & Tidbits from Lee Campbell....

- **Joe Williams** has a string of holes drilled in the board he uses as his chase bike ramp. These serve as the basis for inserting pegs in order to make up rubber motors!
- **Dick Covalt**'s suggestion to gap my Honda spark plugs at 0.018" instead of the factory-recommended 0.025" helped!
- I'd been wanting to use *Airspan* for some time, but I was put off by the fact that the iron temperature required to shrink the *Airspan* also caused the material to unfasten from the edges. Doping is recommended, so I figured that if the dope stuck to the *Airspan*, it should also hold the *Airspan* to the surfaces of my wings & stabs. It works, and I got much better results. (*Airspan* is usually adhered with *Balsarite, Balsaloc* or *Stix-It.*)
- The 36" plastic boxes that Joe Mekina and I use for wood are available from WalMart for about $12.50 each. They come with 2 trays that serve to hold the box together, if heavily loaded, and are a good storage spot for front ends, etc. when keeping models in them.
- Ironing on tissue, etc..... I've been ironing *Monokote* numbers on to silked wings for a long time. And also on to well-supported flat surfaces such as fuselage sides, glider wings, etc. I also iron tissue that has been applied shrunk and doped. Use a fair amount of heat, and keep the iron moving!

Check out new additions to Lee's Line o'Kits! Catalog, $4.00. P.O. Box 3104, Muncie, IN 47307. Ph: (765) 289-7753. (souper30@gte.net)

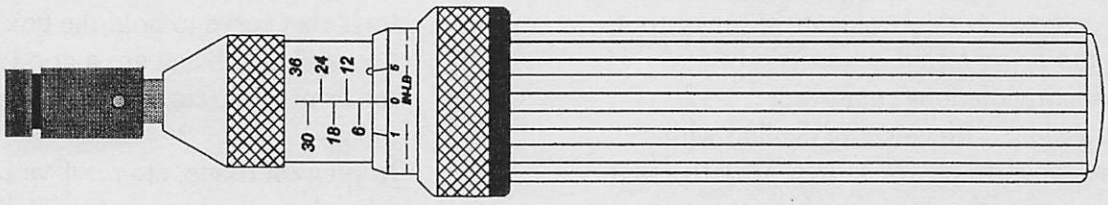


TOP SECRET

Your engine will run better when assembled with ...

TORK-IT Mod. 36

Precision Torque Screwdriver



Get your ***HEAD ON RIGHT!*** *...* *your* ***GLOW PLUG TOO!***

A. Model 36 Screwdriver (Above)

6-36 in-lb covers US bolts from #2 - #8 and metric through 4.00 mm. This range covers most model airplane/car/boat applications below quarter scale.

B. Model 200R (Ratchet Wrench)

40 - 200 in-lb for #10 through 5/16 bolts. Used by quarter scale model builders and the home built aircraft group.

C. Bit Set (8 piece)

Selected for use with the Model 36. Covers metric up to 4mm and US up to 8-32. Apex (long) bits in wooden holder.

	Drive	Model No.	Range	Weight	Price
A	1/4"	36	2-36 in-lb	0.8 lb.	$84.95
B	1/4"	200R	40-200 in-lb	0.8 lb	$94.95
C	1/4" hex	8pc	see above	n/a	$36.00

TORK-IT
1250 Kelvington Way
Lilburn GA 30047

CALL (770) 736-0613 or FAX (770) 736-0916

SASE for FREE Theory, Instructions, and Torque Specifications
http://www.torkit.com

TORK-IT! TORK-IT TORK-IT!

SCREW YOUR HEAD ON RIGHT -- BUT NOT TOO TIGHT

Torque is a force applied to an object that tends to rotate that object. When parts are fastened together with screws, the torque applied to these screws determines the pressure holding the parts together. The more torque we apply, the tighter the parts are held together. For example, the more torque we apply to cylinder head screws, the tighter the cylinder and head are clamped together. The correct torque takes into consideration factors such as strength of the screw, the threads engaged, the cylinder material, thermal expansion, etc. Equally important as the correct torque, is the sequence and stages by which these screws are tightened. Follow the tightening sequence (see diagram) and tighten fasteners to 50%, then to 75%, and finally 100% of the desired torque.

Torque is measured as the amount of force times the length of the lever arm. 12 in lb means 12 lb applied at the end of a 1 in lever (same as 1 lb applied at the end of a 12 in lever). The Tork-it Model 36 is a release type device that releases at the preset torque. It complies to ANSI Type 3, Class A, Style 1, Screwdriver Grip Torque Wrench Standards. You can not apply more than the preset amount of torque.

Specific torques for model engines run from 7.5 in-lbs for 2.0 mm (valve cover) screws to 24.0 in-lbs for 4.0 mm (cylinder head) screws. If you apply 5 pounds of force at the end of a typical L-shaped (2-3/8 in long - 3 0 mm) socket head wrench, you have applied approximately 11.9 inch pounds to that screw. If you apply that same force 1/2" from the end of that wrench you have applied 9.4 in-lb. That is a 25% difference in torque applied. To properly torque the head of your favorite 1.2 engine to 21 in-lb, (using the L-shaped wrench above), you should first apply 4.63 pounds to each of the 6 head screws in alternate rotating sequence, then 6.73 pounds, and finally 8.84 pounds to reach a final torque of 21 in-lbs. Who can tell the difference between 4.63, 6.73, and 8.84 lbs as well as the exact place you are placing the force on the L-shaped wrench? The procedure is very simple with a torque screwdriver. You simply set the amount of torque desired and the device releases at that torque. In the above case you would tighten the head screws to 12 in-lb on the first pass, 16 in-lb on the second pass, and 21 in-lb on the final pass. (Observe the alternate rotating sequence). No professional mechanic would consider working on your automobile, your lawn mower, or even your weed-eater without the appropriate torque equipment. Chances are your model engine cost more than your weed-eater and perhaps more than your lawnmower -- car ?. Why settle for less with your model engines. Many factors affect engine performance. Correct assembly is the first step to longer engine life, improved reliability and more consistent performance.

TORQUE CONSIDERATIONS

Never use your torque instrument as a hammer or pry.
Never use a torque device as a breaker.
Always store your torque instrument set below 25% of capacity.
Loosen all screws before re-torquing.
Clean fasteners and apply a film of lubricant (anti-seize compound).
Be sure threads and threaded screw holes are clean.
Use alternate diagonal tightening sequence. (see diagram)
Tighten in at least three stages. 50%, 75% and finally 100%.
Do not torque hot equipment - let it cool!

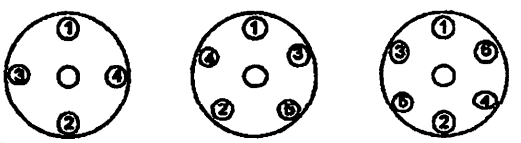
Recommended Maximum Torque (Steel screws into aluminum)

Screw Size	Torque	Socket Size
2.0 mm	5-7 in-lb	1.5 mm
2-56	6-8 in-lb	5/64 in
2.5 mm	8-10 in-lb	2.0 mm
4-40	12-14 in-lb	3/32 in
3.0 mm	10-15 in-lb	2.5 mm
5-40	14-16 in-lb	3/32 in
6-32	17-21 in-lb	7/64 in
4.0 mm	20-24 in-lb	3.0 mm
8-32	22-26 in-lb	9/64 in

Use the higher values for head screws with longer thread engagement and the lesser values for back-plates, valve covers, carbs, etc.
NOTE: These values consider all threads in good condition.

1/4-32 STANDARD GLOW PLUG 20 - 24 in. lb.(with gasket)
You may need more torque for plugs in high performance/high-RPM applications (18,000 +)

Tightening Sequence



There are many small sets of 1/4 in. hex bits on the market. Allied is a brand found in many discount stores. I sell the AM-(nn)series of APEX bits in the sizes listed above. They are top quality (US Made) bits and the 2" length allows you to get past cooling fins.

Good Luck, Good Flying, and Thanks.....John W. Snider Owner

TORK-IT
1250 Kelvington Way
Lilburn GA 30047
1-770-736-0613 Fax 1-770-736-0916
email torkit@mindspring.com
http://www.torkit.com

CENTRAL INDIANA AEROMODELLERS
28TH ANNUAL REGIONAL FF CONTEST

September 16,17, 2000
Muncie, Indiana

Classic Power (10)	
1 Bob Watson	1050
2 Gene Wicks	992
3 Bob Mattes	631
4 Don Diggs	600
5 C. Harper	448

P-30 Rubber (10)	
1 Dave Sechrist	360
2 Frank Heeb	349
3 R. Lane	286
4 Ed Knoefes	285
5 Stewart Cummins	251

ABC OT Gas (2)	
1 S Myers	294
2 B. Watson	66

Catapult SR-OP (14)	
1 B. Schlarb	296
2 T. Jones	290
3 Ralph Schlarb	275
4 R. Bane	229
5 JBM Griner	213

Mulvihill (6)	
1 E. Knefes	780
2 Bob Perkins	717
3 Walt Tomasch	524
4 R. Lane	512
5 O.C. Stewart	467

Junior Rubber (30)	
1 J. Tortorelli	223
2 D. Coverdill	206

AB AMA Gas (4)	
1 Vince Vilardo	598
2 Guy Scott	596
3 Charlie Harper	434
4 Brad Bane	334

OHLG SR-OP (10)	
1 Keith Barnett	226
2 Ryan Bane	185
3 Tom Jones	178
4 Bill Schlarb	152
5 Joe Mekina	140

CD AMA Gas (2)	
1 B. Watson	310
2 J. Marsh	307

ABC NosGas (11)	
1 B.Bane	720
2 J. Marsh	426
3 C. Harper	417
4 B Mattes	398
5 Richard Covalt	360

OHLG JR (4)	
1 Joe Tortorelli	63
2 Drew Coverdill	45
3 Jason Poti	42
4 Mark Wood	18

PayLoad (2)	
1 B. Hale	360
2 E. Jordan	285

½ A AMA Gas (6)	
1 Keith Fulmer	360
2 Jack Marsh	326
3 Gil Morris	284
4 Joe Mollendorf	279
5 George Hilliard	255

¼ A Nos / 020 Rep. (6)	
1 Roger Lane	300
2 B. Watson	293
3 Shel Myers	292
4 J. Marsh	279
5 G. Wicks	110

Catapult JR (2)	
1 Shane Steinback	38
2 Kyle Steinback	18

½ A NosGas (11)	
1 K. Fulmer	583
2 Don Diggs	440
3 J. Marsh	349
4 K. Barnett	330
5 S. Myers	285

Pee Wee 30 (4)	
1 Chris Steinback	2205
2 Elmer Jordan	2196
3 Bill Hale	2011
4 S. Myers	2000

Moffet / Korda (2)	
1 E. Knoefes	360
2 Orval Stewart	340

Saturday's weather was good, but Sunday turned very breezy. A good time was had by all 58 contestants. Thanks to George Emmelman and his CIA gals for organizing the magnificent bean feed Saturday night. And thanks to all who came to enjoy and support free flight in the midwest.

Next year holds some big surprizes which will be announced at the CIA Banquet on January 21st. You will also get a flyer in the mail for the 2001 contest.

On behalf of the CIA, Moe and Silk say Thanks

OCT. 14 & 15, 2000 --- CIA FALL SCRAMBLE FF RESULTS

NON-POWERED CATEGORY

HAND LAUNCHED GLIDER

Roger Wathen	157
Bob Thoren	148
Joe Mekina	108
Phil Sullivan	106
Roger Staton	101
Jon Reuter	98
Don Diggs	67
Keith Barnett	60
Hank Sperzel	53
J.B.M. Griner	17

HAND HELD CATAPULT

Phil Sullivan	235
J.B.M. Griner	214
Joe Mekina	183
Jon Reuter	137
Bill Reuter	115
Gene Wicks	108
Hank Sperzel	87
Roger Staton	87
Chris Steinebach	82
Keith Barnett	76
Bruce Barnett	67
Les Hallgarth	64
Shane Steinebach	36
Roger Wathen	36

F1H – A1 Glider

Jon Reuter	371
Bob Thoren	317

F1A - A2 Glider

Bob Thoren	448

RUBBER POWERED CATEGORY

P-30

Dave Sechrist	681
Jim Jennings	311
Frank Hebb	276
Vicki Wicks	266
Jon Reuter	143
Jim Richmond	120

MULVIHILL

O.C. Stewart	440
Joe Mekina	217
Roger Lane	120

HELICOPTER

Roger Lane	226

ROCKET

Hank Sperzel	103

DAWN UNLIMITED

O.C. Stewart	224
Larry Willis	160
Bob Thoren	144

BIG E

O.C. Stewart	840
Larry Willis	540

MOFFETT

Bob Thoren	540
Larry Willis	360

ORNITHOPTER

Roger Staton	08

F1B – Wakefield

Jim Richmond	133

F1G – Coupe d'Hiver

Walt Tomash	551
Vicki Wicks	211

OT Rubber

Walt Tomash	548
Larry Willis	491
Hank Sperzel	371
Don Diggs	333

GAS POWERED CATEGORY

Electric

Charles Groth	118
Roger Staton	29

PAYLOAD

Bill Reuter	360
Bill Hale	335
Roger Lane	251

1/2A GAS

Bob Mattes	600
Jack Marsh	578
Hank Sperzel	365
Bob Placier	204
Keith Barnett	185
Jon Reuter	118

A GAS

Keith Barnett	309
Hank Sperzel	297
Guy Scott	120

B GAS

Don Diggs	476
Guy Scott	453

C GAS

Joe Mekina	684

D Gas

Joe Mekina	360

Super D

Don Diggs	169

F1J – SMALL POWER

Joe Mekina	600
Gene Wicks	06

NFFS & SAM CATEGORY

1/2A CLASSIC POWER

Keith Fulmer	360
Bob Placier	329
Hank Sperzel	310
Keith Barnett	69

ABCD CLASSIC POWER

Jack Marsh	720
Dick Covalt	561
Hank Sperzel	342
Don Diggs	277
Keith Barnett	251
Carl Rowland	251

1/4A NOSTALGIA

Gene Wicks	311
Keith Fulmer	120

EARLY 1/2A NOSTALGIA

Keith Fulmer	450
Bob Mattes	305
Gene Wicks	236
Bill Hale	188

1/2A NOSTALGIA GAS

Bob Mattes	475+
Gib Robbins	475-
Keith Fulmer	360
Jack Marsh	293
Don Diggs	287
Carl Rowland	196
Bob Craig	194
Hank Sperzel	88

A NOSTALGIA GAS

Keith Fulmer	600
Bill Hale	360
Gene Wicks	334
Carl Rowland	246
Bob Mattes	240

B NOSTALGIA GAS

Keith Fulmer	568
Dick Covalt	437
Gene Wicks	333
Don Diggs	201

C NOSTALGIA GAS

Bob Mattes	600
Jack Marsh	538
Gene Wicks	349

020 REPLICA

Gib Robbins	315
Jack Marsh	195
Don Boyer	43

NOSTALGIA IGNITION

Don Diggs	331

PEE WEE 30

Bill Hale	1217
Roger Staton	915
Chris Steinebach	563

ABC OT CABIN

Don Diggs	337
Don Boyer	87
Bob Placier	50

ABC OT PYLON

Hank Sperzel	321
Bill Hale	240
Don Boyer	120

OCT. 14 & 15, 2000 --- CIA FALL SCRAMBLE FF RESULTS

.010 GAS
Bruce Barnett 148

ALL EVENT WINNERS

Received 1 oz Muncie Model Supply (Bob Smith) CA. Those that were absent will receive an equivalent amount of cash by mail.

TROPHY CHAMPIONS & CASH AWARD

GRAND CHAMPION OPEN

Joe Mekina	($25)	816 points
Hanlk Sperzel		700
Don Diggs		600
Gene Wicks		533

GRAND CHAMPION Jr-Sr

Jon Reuter	($25)	666 points
Keith Barnett		565

NON-POWERED CHAMP

Phil Sullivan	($10)	1650 points
Roger Wathen		1100
Joe Mekina		800

RUBBER POWERED CHAMP

O.C. Stewart	($10)	800 points
Walt Tomash		600
Larry Willis		450

GAS POWERED EVENT CHAMP

Bob Mattes	($10)	600 points
Joe Mekina		400
Hank Sperzel		350

NFFS & SAM EVENT CHAMP

Keith Fulmer	($10)	1300+300
Bob Mattes		1300+100
Jack Marsh		975

Note: Scores multiplied by 100 to eliminate fractions

The weather for the '00 CIA SCRAMBLE was pleasant but windy (10-15 mph) Saturday; slightly cooler Sunday with light and variable winds. The flying conditions Saturday were very challenging with some models going into corn fields to the east, and others not surviving the launch into the stiff wind. Sunday saw some of the best flying conditions at a Muncie contest this year. Competition was focused on NOS Gas, Classic Power, P-30 and of course the Glider events. O.C Stewart copped 3 wins in the Rubber Powered category, as did Keith Fulmer in the NFFS/SAM/CIA & Joe Mekina in the AMA/FAI categories. Many thanks to all for their cooperation and patience.

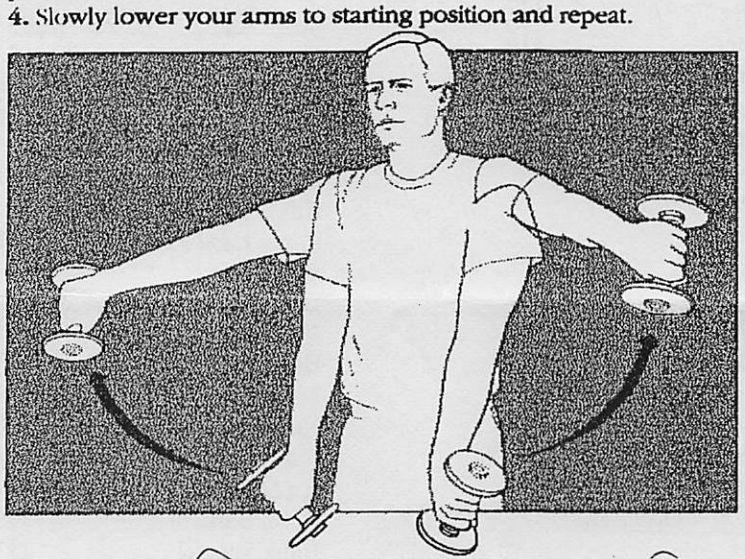
Now lets get to building for next year.

Richard Covalt, CD 10/16/00
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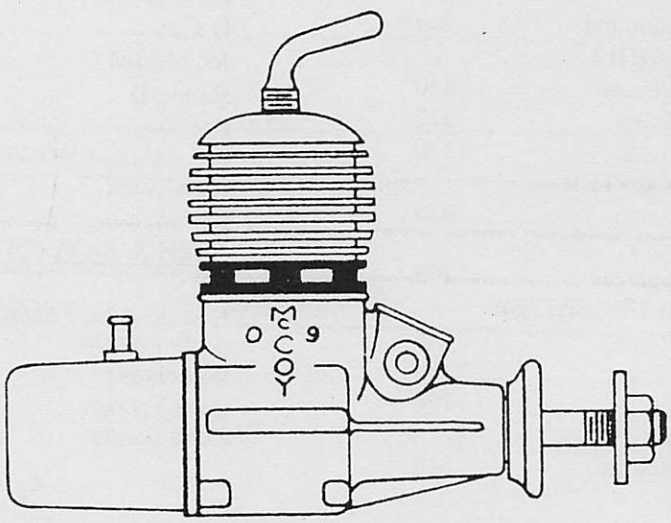
..... and more HLG exercises .....

Rotator Cuff Elevation (Supraspinatus)

1. Stand with arms at your side and weights in hand. Keeping your elbows straight, turn arms in so that the thumbs are pointing downward.
2. Bring your arms forward, slightly in front of your body.
3. Raise your arms to 80°, keeping your elbows extended and thumbs pointed toward the floor.
4. Slowly lower your arms to starting position and repeat.



McCOY .09 DIESEL (FULL SIZE)



CIA Club Point Claim Sheet - (See CIA Rule Book for details)

________ pg ___

Member______________________ Open_____ or Jr/Sr_____ (under 19 by 7/1)

Date	Contest	Location	Class	Events	Model Design	Place	Points

2000 C.I.A. AREA FREEFLIGHT CONTEST CALENDAR

SEP	2,3	COFFC Free Flight Meet	AMA Flying Site - Muncie, IN
	4	Labor Day	
	16,17	CIA 28th Annual AAA FF Contest	AMA Flying Site - Muncie, IN
	16,17	Hoosier Cup (America's Cup FF Comp.)	AMA Flying Site - Muncie, IN
	23,24	Mid-America F.F. Champs	M-A Air Center - L'w'c'ville, IL
OCT	6-13	SAM Champs	Pensacola, FL
	14,15	CIA Fall Scramble (Featuring all National Cup events)	AMA Flying Site - Muncie, IN
NOV	18-19	Skyscraper Annual/International Challenge	'Barron Field' - Wayawanda, N
	19	MECA Collecto	??
DEC	29-31	47th King Orange International	Palm Bay, Fl

The **INFORMER**

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Phil Sullivan

Vice President
Moe Whittemore

Sec'y/Treasurer
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