MODELAIR-TECH
BERLE UNT

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1/4 Scale PIPER CUB built from Nosen kit first flown today using electric power supplied by a **MODELAIR-TECH H-1000DP** dual motor belt reduction drive unit Specs. Follow:
Reduction Ratio = 3/1
Prop = Zinger 18 X 6
Batteries = 24 SR 1500 MAX cells
Motor Current = 27 amps
Flight time = approx. 5 1/2 minutes
RPM = 5,000
Gross Weight of CUB = 15 1/4 pounds (was originally built with gas power in mind).
Motors used = TWO Graupner SPEED -700 (9.6 volt) plain bearings (at approx. $25.00 each from Hobby Lobby)
Battery Weight = 47 ounces (almost 3 pounds)
H- 1000DP belt drive weight = 10.6 ounces
SPEED -700 motor weight = 11.3 ounces each

Cub was off the ground in about 20 feet. At altitude you could easily throttle back and maintain good controlled flight.

But if you think that was good—-don't give up the first time around --- try again with other parameters. After having just finished that first flight session with the Cub, we were able to get delivery on two of the new Graupner SPEED -700 (12 VOLT) motors from Hobby Lobby. These new higher voltage versions of the "700" are expected to sell for $41.00 each. The big plus is that they can handle more battery cells.
5/27/95

Tom installed two of the new SPEED-700 (12 volt winding) motors in the 1/4 scale Cub again with our H-1000DP dual motor belt drive. We still used the 3.0/1 pinion pulley. But wfth the higher powered motors the choice now was a Zinger 20 X 11 prop, running on 32 SR 1500 cells, turning 4,000 rpm at only 19 amps The one thing learned very quickly on several bench test runs is that when going above 18 inch diameter props, on our H-1000DP belt drive, you must increase the prop shaft diameter from 1/4 inch to 3/8 inch. That change will be incorporated into all new H-1000DP units (expected to use the larger diameter props. The bottom line is that our 1/4 scale Cub now weighs 16 1/4 pounds and still gets off the ground in about a 20 feet run. But the best part is that we now obtain easily 9 1/2 minute flights on the 1500 cells with the prospect of 12 minute flights on 1700 cells. Flights are very realistic --- in fact they are spectactular!

Update from Ken:

I saw this plane fly a demo at the Electric Nats in Muncie. It does, indeed, fly well. Giant scale has arrived in the electric arena. Flights are quite long and majestic. The flights are also much more realistic than the glow versions that I have seen of the Cub.

The AMA Electric Nats: A Report
Why should I read this? I am only a sport flier and not a competitor!!!
I REALLY DON'T CARE ABOUT THE NATS.... but PLEASE, DO YOURSELF A FAVOR and READ THIS - Ken

I hope that you have started this article because it is not about what BIG BOY did what at something you don't know or care about. As all of you know, I try to put in only articles that are of general interest to most of you, hopefully this will be one of them.

Why the Electric NATS?

It gives competitors a chance to shine and show off what they know and how well they fly at certain tasks, but that's not all! It gives you a chance to learn and apply what you have learned immediately. The electric NATS is unlike anything you'd expect. The BIG BOYs are there to win, of course, but it's not a cut-throat competition. They help everyone by dispensing what they know. The information they can give you, in a couple of days, is worth the price of the trip. Hands on is the best and fastest way to learn. If you are new to "the game" of task

Gerhard Speilman's twin Lazy Bee flying at Muncie.

flying, or if you haven't done some practicing, you may not have a chance to "win", but you will have had a chance to fly with some of the finest task fliers in the US and at a very fine flying site, the AMA site at Muncie, Indiana, and you'll definitely be a "winner".

Isn't It Expensive?

First of all, you must remember that what you are really doing is furthering your electric education, taking a vacation, meeting soon to be new friends and associates in e-flight, having a couple of days of flying at a super site and enjoying your favorite hobby. My expenses for this year were under $100.00 for the three days including gas (250 miles each way in a Suburban - 10 hours) and food. I didn't deprive myself of anything. I camped in my Suburban right on the AMA site (which has showers available), but went to dinner at very nice places on both Friday and Saturday night, ate breakfast out each morning and lunch at the field. I didn't compete in any of the events, but only flew in the fun-fly on Friday. Competing in the task events would have only increased my expenses slightly. $33.33 a day on average. I can easily blow that much at home, and not have as much fun or gain the knowledge I have now.

Don Belfort's old-timer takes wing during the Nats.

Don't I need a "special" plane and gizmo radio?

Heck NO! It is true that some of the top competitors use special planes and radios, but many of the off-your-wall planes are competitive with just a little effort on your part. Let's say you have an old-timer or a sailplane that you sport fly with a geared "05" and want to give class A & B a try. What do you do? First for class A, change the battery to a 7 cell sub-C 1000 mAh pack, if it isn't already. Why a sub-C 1000 mAh pack? If you are flying an 800 mAh pack, your battery internal resistance is too high to get the best climb, and if you are flying anything over 1000's, you're carrying too much unneeded weight for the limited motor run. That wasn't too hard and now you may have an extra pack for sport flying. Now find a prop that will give a very good rate of climb. The only current consideration you really need to take into consideration concerns your motor's top current rating - don't exceed it. At the '95 NATS class A old-timer had a one minute motor run, while class A sailplane had 45 seconds of motor run. The task, for both, was then to land at exactly the 8 minute mark (including motor run) in a 25 ft. diameter circle without ever turning on the motor again. How do you do this - PRACTICE!

As long as you are there, you might as well compete in class B as well. What do you need to do differently to compete in class B old-timer or sailplane? Not much, just come up with an unlimited pack that will work with your motor. A simple solution would be to have an eight cell pack to take the place of your seven cell pack with an appropriate prop change. Why do you need "more power" for class B - because the motor run times are shorter, but the task is the same - an eight minute total flight with a spot landing. You could fly 7 or less cells in class B, but your altitude might not be enough, with the shorter motor run, to get you the time you need.

Gerhard with his twin Lazy Bee during the fun flying.

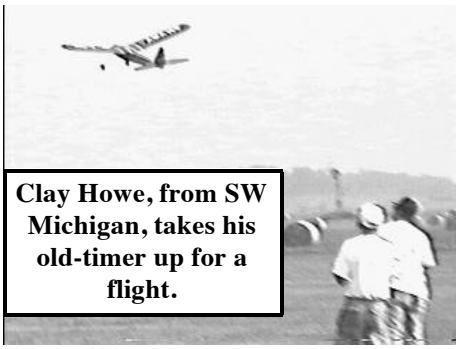
When Are Next Year's NATS?

You've got plenty of time to get ready. The Electric NATS will be held at Muncie near the end of July in 1996. To help some of you local fliers get ready, I am planning on having the EFO "host" several mini-A & B "get togethers" with ALL AMA members welcome to join us. Watch the Ampeer for dates and times. AND HERE IS A HINT: We will also be having some "get togethers" to fly Speed 400 pylon, so you might want to get one of these inexpensive racers put together soon. Hopefully, I will have room in this issue to give you some data on Speed 400 racers - if not look for it next month.

What Was It Like At the '95 Electric NATS?

Electric Nats - Muncie - June 23-25

Friday was a beautiful day, with a nice overcast to keep from frying on the field. It was the day set aside for fun flying. Most of the fun flyers were there to compete in sailplane and old-timer class A & B on Saturday and Sunday, but a few were just there to fun fly or watch. Dave Grife brought his air force which includes; a Mosquito (twin 40 powered), Hurricane (60 powered), ElectroStreak (15



Clay Howe, from SW Michigan, takes his old-timer up for a flight.

powered), Hughes Racer, Mystery Ship, Sig TriStar and CadCat. Gerhard Spielman had a really cute Clancy Aviation Lazy Bee twin powered with Speed 400s. He had made the hubs for the three-bladed props and the prop extensions. It is really neat, the twin Lazy Bee, and it flies well. I hope the photo does it justice. Bob Aberle and Tom Hunt flew their Train-EE and Acrobat E as well as their 16 lb. 1/4 scale Nosen Cub. The Cub is powered by two Speed 700 12v motors attached to the ModelAir-Tech BD-103 (H-1000DP) 1000 watt twin belt-drive. It is very impressive in flight and comes out of VERY LONG grass easily - I saw it!

Talk about a great flying site! Ya gotta go!

Many of the folks attending on Friday were the SEFLI folks that CD Larry Sribnick rounded up and brought with him.

And then the storm. As some of us went to dinner, a tremendous thunderstorm and downpour hit. We managed to get our dinner in during power outs, but some of the people in the city of Muncie weren't so lucky and lost power through the whole night.

Saturday dawned with a hazy sun and light breezes as contestants came from all over the USA to take part. It was a great day for flying, sunny but with some humidity. The old-timers took to the air first and had 3 successful rounds. Places were; Bill Jenkins - 1st, Don Belfort - 2nd, Bob Aberle - 3rd. The Lanzo Bomber was very successful in this event, but almost any old-timer with an Astro Cobalt 05 and 7 cells did well. A typical set up is an old-timer with an AF FAI 5 or 6 turn 05 and 7 1000 mAh sub-C cells. This is an event that anyone who practices a little at spot landing and staying aloft for 8 minutes can do.

The A sailplane uses the same type of power systems with 2 meter type sailplanes with the same task. They flew after lunch on Saturday and had a wonderful time. The winners; Tom Hunt - 1st, Wayne Fredette 2nd, Rick Vaughn 3rd.

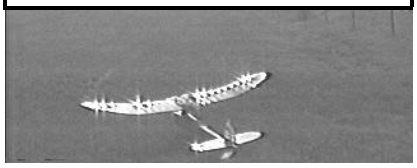
Through out the day, Bob Aberle and Tom Hunt talked about and demonstrated their planes and belt drives.

Sunday was one more sunny day. In the morning the old-timer B class took to the still air with the winners being; Bill Jenkins 1st, Tom Hunt 2nd and Bob Aberle 3rd. Class B sailplane, unfortunately, had the only real problem at the event when Tom Hunt's plane and another glider kissed too hard in mid-air and rekitted themselves on the way down, as well as on impact. What a shame, for it was a truly outstanding and wonderfully safe meet.

The People

As always, it is the people that make the event. Everyone couldn't have been better, nicer or more helpful. The event was organized and run by Larry Sribnick - superb job. Everything came off on time and was very efficiently run. Steve Anthony, Larry's right-hand man, is an absolute joy to spend time with. His continuous encouragement and help to all contestants was much appreciated. With enthusiasm like his, electric has a great future. The SEFLI members, that Larry recruited and brought along, were fantastic. I am afraid to list them for fear that I might forget someone, but they were all great, super, fantastic people that I will never forget 'em. Warm and friendly - what a great group. The fliers from all over; New York, Pennsylvania, Louisiana, Texas, Georgia, Michigan, Ohio and more. What wonderful folks. Sounds like I am gushing - I am - you really should have been there.

Mr. Stucker's old-timer glistens in the early morning sun. He uses Sky Shine to help him spot it way up high.



Well what can you do about it? Plan on attending next years electric NATS at Muncie and see for yourself, come the end of July 1996! See ya ALL there - Ken.

BRUSHLESS MOTORS -CHARACTERISTICS AND APPLICATIONS

by Ed Koffeman

from the "**Electric Model Flyer**"

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The purpose of this article is to provide basic information to people about brushless motors. I must warn you that I have a vested interest in this subject. As a result of becoming aware of the benefits of using brushless power systems, I am now a local dealer for MaxCim Motors. I am also the designer and manufacturer of the brushless motor controller sold by MaxCim. So please