

Sanyo to Uprate 1000 SCR Cells

by Steve Neu

from: Peak Charge, of the Silent Electric Flyers of San Diego - October 1995

Editor: Steve Manganelli

"1000 SCR cells will soon be a thing of the past" said Joe Carcone, manager of Sanyo Energy in Tijuana, Mexico. In an October 3rd phone conversation seeking information about new products, I was informed that some time in the next year the 1250 SCR cell will replace the widely used 1000 SCR cell raising the nominal capacity by 250 mAh. It seems that Sanyo can't leave well enough alone. The new cell will be the same size and about 2 grams heavier than the 1000s, but (here is the bad news) have a higher internal resistance. Joe is sending me some samples to test to see how they work in our R/C Electric application. I will keep you posted as to the results. The U.S. F5B team is getting a box of the "old cells" in case the new cells don't work as well in the high current F5B models.

I think this change will eventually effect the 1400 mAh cells also. We will see!!

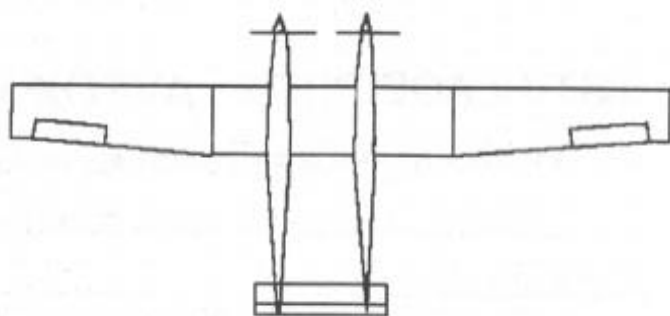
(Remember where you heard about this first, folks! - S.M.)

Congrats to San Diego!

The Silent Electric Flyers garnered a first place in 7-cell cargo, at the Astro Champs, lifting 15lbs. 11oz. Great job gentlemen! Check up coming model magazines for pictures of this unusual plane.

To get a very good report on this plane and how they did it, write to Steve Manganelli, 3296 Martinez St., San Diego, CA 92106-2959 or e-mail MANGANELLI_S@nadepni.navy.mil

Ask him how you can get hold of a copy of the October 1995 issue of the newsletter.



Crude sketch of the SEFSD Cargo Lifer a.k.a. MISS MADONNA!

WHY I LIKE THE KYOSHO DCM 20BB MOTOR

by Bob Canada

(This appears to be from the DEAF newsletter, based on the comments at the end, but I've lost the exact source. I apologize.)

Electric flyers are cynical about 20 to 50 watt motors. Rightly so because most small electrics require a lot of compromises, and expensive, exotic methods resulting in borderline flights, and crash prone flights. We are practically guaranteed less performance the smaller the motor. Ninety percent of commercially sold small motors are merely adaptations from other industry use. The Peck Silver Streak, Hyline's Elf, 50 watter, and Imp 30 watter, as well as Hobby Lobby's 400 have that familiar Mabuchi look in construction.

They also have another basic compromise, in my opinion. They all run with 3 to 4 cells and will not run much above 10,000 RPM. Note that the Kyosho 20BB runs on 6 cells and has (no load) 25000 max RPM. So what? I'll explain later.

This is not to say good models can't be built and flown with these other motors. There is plenty of challenge and reward for designing with these motors. I'm simply asserting that the power to weight ratios of these motors does not match the Kyosho 20BB.

Ironically, the Kyosho falls at the bottom of the power spectrum, 20 or so watts, which requires the lightest practical construction. Here is the rub. We are forced to build as light and strong as possible to realize the power potential of the Kyosho 20BB motor. Truthfully, I have been unable to find a 50 watt motor with the Kyosho's power to weight ratio.

Tom Davis found one once, but has never been able to find a purchase source. He called it the AYK Magnum AP racing motor. If anyone knows who can supply this motor, or its equivalent, please call me collect at 1 (901) 377-0877.

The motor in question turned 50,000 RPM no load, and weighed 1.9 ounces with ballbearing races. It measured 24mm and has a 2mm shaft. Japan is supposed to be loaded with them.

Once you have set up to build your first set of gears for the Kyosho 20BB motor there is a tremendous bonus. With conventional electrics we are all dependent pretty much on props, gearing, and motors off the shelf. Certainly this is fine, but because 25 to 50 watt motors are so small, we modelers can design our own props and gearing in a much wider range than those on the market today.

I guess that I'm trying to get across

that guys like Tom Davis and a few others are achieving spectacular results because of this prop and gearing flexibility. If the promise of these small planes holds true then we can all look forward to many inexpensive model such as B-17's and DC3's that will fly just fine.

Learning to scratch build props and gearing around the small motors is a small price to pay, and for tightwads, like me, a fraction of the cost of conventional electrics. Props and gearing in this power range are not subject to stress as are the more powerful 05 motors. This allows home brew props of the rubber band type.

Keith Shaw let the secret out in Shaw Speaks when he stated that finding the correct prop is all important, and much experimentation is needed.

Conventional electrics and wet power are stuck with what is on the shelf. Wee Watters can home brew props ad infinitum. Who is to say that a 7 to 1 gearing and a 6.5 by 7 pitch will not resonate perfectly with one particular plane and power package?

Finally, scratch gearing with a 48 inch pitch gear has proven to tame these small high RPM motors quite well. If you have been paying close attention to the War Power Motors bunch, (i.e. Model Electronics Corp. Ed.), up in Seattle you will understand that taming a high RPM motor is the secret to their astounding performance with 05 and larger ceramic magnet motors.

I hope this encourages some modelers to go back and bone up on old stick and tissue building skills, and get into this Wee Watt category, which for me, ranges between 25 and 50 watts. [I agree. Hopefully, Bob, and other Wee Watters will come to Dallas on September 30 for our Fly-In where they'll be able to shoot for Lightest RC Electric to Fly 10 Minutes, and so persuade more of us to buy in to the Wee Watt persuasion.]

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ELECTRIC WONDER

Gary Warner

(Also from the DEAF newsletter)

Sig put out a little flying wing plane called the Wonder about a year ago and ever since I saw it, I knew it would make a good "E" conversion. The first thing I did was to run out and buy the first kit to arrive at Wild Bill's Hobby Shop.

After getting home and looking carefully at the kit, it became obvious that it was going to require some modification for an electric motor, so much so that I shelved the kit in the hopes of putting a 15 size glow engine in it. The biggest problem I had with the

design was the low, 338sq inches of wing area.

The kit was surprisingly heavy, and this would mean an estimated weight of 40-42oz if built stock. Maybe it would have flown at this weight, but I wasn't willing to take that chance what with a large investment of building time.

Moving on, (about 6 months later), my desire for a hot little "sportster" plane was increasing again. This came about because of our club scheduling an exhibition outing to a gas" field in order to show those guys just what electric powered planes can do.

Well, the Wonder was the first thing to come to mind. I once again took the plans out and looked them over carefully trying to find the best way of lightening the air frame. I also moved away from the cheaper and heavier motors to the lighter Astro 035. Finally I was convinced that the weight was going to be acceptable, around 32oz.

The biggest weight saving was to come from changing, replacing, and/or omitting wood in the kit. When it was all said and done, the only wood I used from the kit was the ribs, spars, trailing edge sheeting and two small plywood formers. All the other wood was replaced with thinner and lighter selections.

Another big weight savings came from not sheeting the top and bottom of the leading edges. The kit didn't call for any shear webbing, so I didn't see the need for "D" tube construction. Instead I added shear webbing for "0" strength and hoped the wing wouldn't flutter at high speed. The covering is Mica-Film, and the aileron control system was replaced with a flex cable system. The air frame weighs only 7oz - 7 to 10 oz less than the original kit. I was pleased.

As I said, the power is an Astro 035. I made my own motor mounts from aluminum and rubber banded the motor to the mount. This turned out to save a lot of weight. The fuselage was left mostly open under the wing and thus I could use most any size battery I had. Placing the aileron servo on its side in the wing such that nothing was sticking out into the fuselage helped in the battery compartment. The motor control is a Simprop 95 with a soft start. This really is only an on/off controller, but I chose it over a micro switch so that I could take advantage of the BEC function.

As everything was assembled and the first flights were near, I placed the plane, ready to fly, with a 7 cell SCRC 1700mAh pack on the scale. Total weight 31oz! I turned on the motor and checked amps and RPM. The prop used is a Graupner Super 6x6. Static RPM is about 15,100, and static amps about 35. A little playing around with these numbers and I knew I had a keeper.