

## **BTR**

- 1) Russ Green 7:32.71
- 2) Bob Christ 8:43.44
- 3) Don Burke 56 Laps



## **.15 Rat/Hamster**

- 1) Bob Whitney 6:13.34
- 2) Bill Cave 7:11.79
- 3) Steve Eichenberger 34 Laps

## **SWCLA Formula Unlimited**

- 1) Bill Lee 6:49.09 (record)
- 2) Jim Holland 7:35.21
- 3) Dave Dawson 8:44.08



## **NCLRA Quickie Rat**

- 1) John McCollom 6:10.66
- 2) Jim Holland 6:21.37
- 3) Russ Green 8:21.27



## **CONSTRUCTION OF 'NEMESIS' B-TR** **BY DON BURKE**

I thought this would be a timely article for "Torque Roll". Along with coinciding with the release of the official NCLRA B-Team Racing rules. I think it will give someone enough time to build something to compete with at this year's NATS.

A little history. NEMESIS is my third BTR design. The first, VEEBEE, was flown in 1965 by Danny Jones and Roger Theobald. I still have the engine. STG21/29, Pomadi pan and landing gear from that one. The second was the GRMZPF-BTR built in 2002 (only a 37 year gap!) and flown by Ron Duly and Jim Holland. Using it, Jim and I got 2nd at the 2003 NATS. NEMESIS was built in 11 days in March of 2004 and was flown for the first time at Cabin Fever in Tucson. We subsequently used it to win the NATS in 2004, and currently have the BTR 140 lap record. SPRNTR was built in October/November of 2004 for the 2005 season. It incorporates a lot of lessons learned from building the other two. Ron and I used it to set 35 and 70 lap heat records at the 2005 NATS, but didn't use it in the final due to tank problems. We instead chose to fly the final with NEMESIS. Unfortunately I messed up a pit stop and broke a prop, finishing second. On a good note, we were beaten by Russ Green/John McCollum. Russ used his variation of NEMESIS built from my plans.

### **CONSTRUCTION OF NEMESIS & SPRNTR**

**Construction** – The wing and stabilizer/elevator should be built first. Select the proper sizes of straight "quarter grain" balsa and straight pieces of basswood as required for the edges.

#### **Wing –**

The spar for SPRNTR is made first. Glue the carbon fiber strips and 1/32 balsa to the top and bottom of the spruce material using 30-minute epoxy. NEMESIS doesn't use a spar. Cut all the various pieces to shape. Then edge glue them and the spar together on a flat surface. Trim the edges straight prior to gluing so as to not impart a twist to the wing.

**Edges** – The outboard leading edge of NEMESIS is basswood to help withstand "pit stop shock". A CFstrip of .019 x .118 (.021 X .25 is just as good) from CTS is inset into the LE and TE. It provides a lot of stiffness and helps to keep the wing from warping.

**Outboard panel** –NEMESIS - The forward outboard panel just behind the LE is made from three laminations of 1/8 balsa. The top and bottom are 4-6 lb c-grain, the center lam is hard balsa with the grain running fore and aft. This should eliminate the wing crush we experienced at the 2005 NATS.

**SPRNTR** – The LE forward of the spar is three balsa laminations – 1/16 core, grain fore & aft outboard – 3/32 top & bottom grain spanwise.

**Leadout channels and tip weight.** The leadout channels are formed within the laminations. In the outboard side install a ½ ounce tip weight in the center lamination. The pockets for the bellcrank and leadout connections are cut after pressing the glued up and shaped wing with fiberglass cloth.