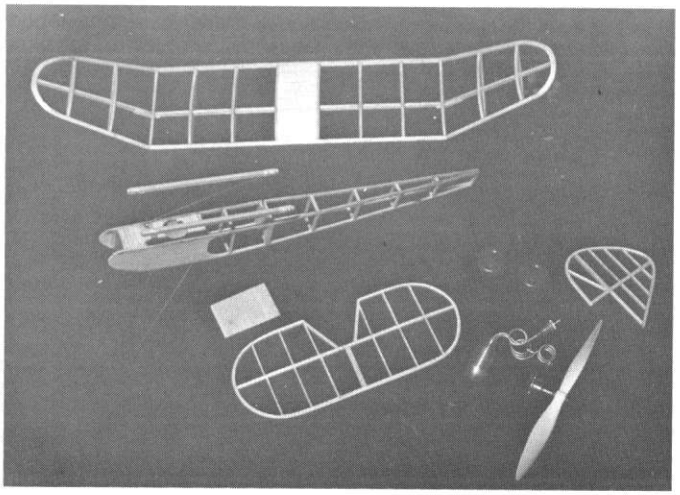
Gym Dandy

By DAN WALTON. . .Here's a nifty little design that would prove to be a dandy in the gym or outdoors. It's powered by a Brown Jr. Campus A-23 CO_2, and is easily built. Trimming is simple, and the flying is a gas!

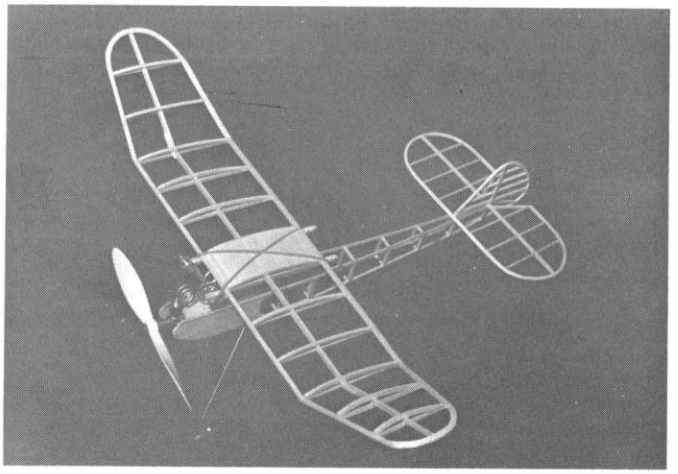
• The Gym Dandy came about as a matter of necessity. Over a year earlier I had purchased one of the new Brown Jr. A-23 CO_2 engines. Unfortunately, due to extenuating circumstances, I was never able to install the unit in a suitable model. Now, things have settled down a bit, and an opportunity has presented itself for some serious modeling.

The criterion for the design was that it have a wing representative of the Peanut class in span, construction, aspect ratio, and airfoil. The tail surfaces were also to be like those typically found on a Peanut. However, so as not to put the new and valuable engine and the entire project in jeopardy, a very stable model was desired.

So what is more stable then an 'Old Timer'-type free flight model? After all, it had to fly indoors in a gym the local club uses in winter. So the fact that the Gym Dandy looks like a Lanzo Record Breaker is no coincidence. The wing is held on with a rubber band and allows a very compact



Gym Dandy's sub-assemblies are finished, and ready for covering.



Bones of the Dandy exposed, showing simple construction and the Brown Jr. Campus A-23 CO_2 engine.

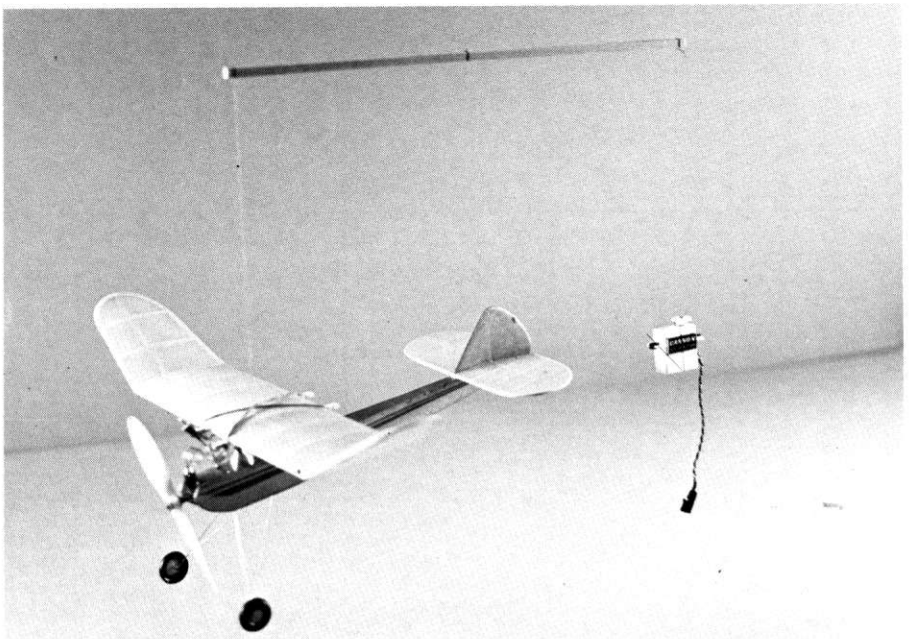
storage configuration plus an ability to adjust wing incidence if it should prove necessary. Thus the decision was made. Now off to the drawing board.

A quick search of my tip and tail forms box turned up some old Peanut Scale laminating forms to make suitable tail and wing tips. Wing cord was to be the same as my next planned model. Two and one half inches. The rest was actually quite easy. After about five or six evenings, the model was finished and ready for the next fun fly indoors.

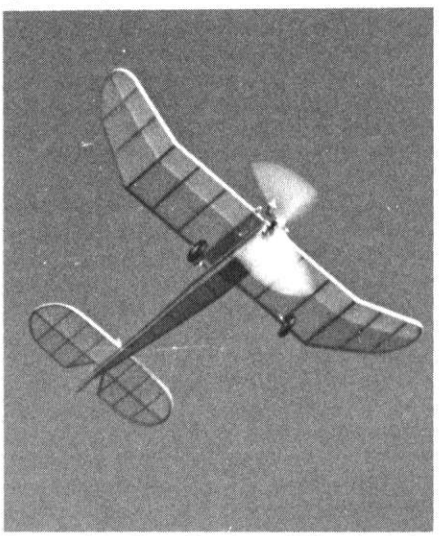
I won't attempt to make this a blow by blow construction article, but feel it wise to give some pointers on the peculiarities of this model.

If you are new to CO_2 or Peanut Scale, pick up some back issues of this magazine and read over the Peanut Scale arficles carefully. You will probably note that lightweight is hammered upon quite heavily. There is a good reason for this. Heavy Peanuts don't fly very well, if they fly at all. This ship came in at about .47 oz. The same weight as a Cannon CE-9 Super-Micro servo. Most rubber power Peanuts are a good deal less than this. The CO_2 engine, light as it is, does inflict a certain weight penalty so you will have to make up for it in the airframe to obtain good duration. Be particularly picky in the tail area. Note also a somewhat short nose moment. This also will help counteract the weight of the engine.

Construction is similar to the more commonly encountered Peanuts with a stick and tissue fuselage and sliced rib wing. Tail surface outlines and wing tips are laminated. If you have never tried laminating before, don't be scared off. It is very easy and results in an ultra-light model. My favorite method is to use indoor grade wood stripped into the necessary width and soaked in hot water for 10 minutes. The form is usually 3/32 or 1/8 sheet with the outside edge cut to match the inner contour of the desired outline. The edge is sealed with wax (I use a dark crayon) and the balsa wrapped around with glue between the layers. I usually can do two layers at a time. The trick is to hold the wood strip under a slight tension to keep the wood from crippling or kinking as you pull it around the form. On this model try the stabilizer first as it has the largest bend radius and is a good starting/warm-up point. I use Titebond or equivalent aliphatic resin glue thinned 50/50 with water for these laminating operations. After carefully removing the outline from the form, check around the inside and remove any crayon that may have stuck to the inside of the assembly by sanding. This assures that the glue joints contacting these areas will not weaken because of the wax. The rest follows normal modeling procedures. Above all, don't be discouraged if your first try at laminating an outline should fail. Try again. The results are well worth the effort.



Gym Dandy shown here balanced against a Cannon CE-9 servo on a beam suspended from string.



Good-looking Gym Dandy on high as it circles away on a fine flight.

The wire wing support assemblies and landing gear assemblies are glued between the fuselage halves. But the brace wires and landing gear struts are soldered together only after the fuselage is complete, except for the covering. The need for extreme care here should be obvious.

The firewall is also done a little differently and requires some discussion. I use brass 00-90 screws and nuts to mount my engine. They can be obtained from any good hobby shop which carries a healthy line of model railroad supplies. The firewall is 1/64 plywood for lightness, although 1/32 will do. The holes for the engine are marked and drilled. Then I mount the nuts and screws

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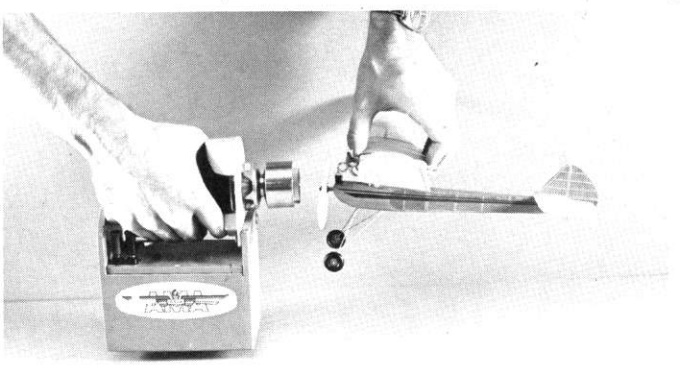

Okay, let's crank this sucker up. . . really not necessary with a CO_2; this efficient motor starts with one flip of the prop.

Weights engineer D. Dodgen admires lightweight Gym Dandy; liberal use of sandpaper brings down total weight considerably.

give you many enjoyable flight experiences at either a sport scale or pattern contest. And it has some good looks that will turn some heads. •

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tightly to the plywood without the engine. Now comes the part which requires some care. Around the base of each nut add a little cyanoacrylate adhesive, being careful not to get any on the screws. Huzza! Instant blind mounting nuts. Now just remove the screws and glue the 1/16-inch sheet balsa backing to the firewall after adding 3 holes to clear the nuts. You now have a firewall assembly that will allow the engine to have thrust adjustments made to it without having to tear apart the fuselage to grab the nuts behind the firewall.

One final aspect which really applies to just about any model plane. Apply liberal doses of the one element that does not add the slightest bit of weight to a model. Sandpaper! You will be surprised how much lighter your models can be.

Now that your model is complete and ready to fly, I'm afraid you are on your own. I was not disappointed in the stability of my model. The Gym Dandy was trimmed and flying around in the gym by the second flight. The only necessary adjustments were a little extra left rudder and the addition of some downthrust. The model flies in left circles of about 25 to 30 feet in diameter. Best time so far is 28 seconds with a

2cc tank which is more than adequate for learning to deal with your new engine. After you have mastered the lessons to be learned from this model, you will find that the engine is easily removed for the real test: a Peanut Scale model of your own choosing. •