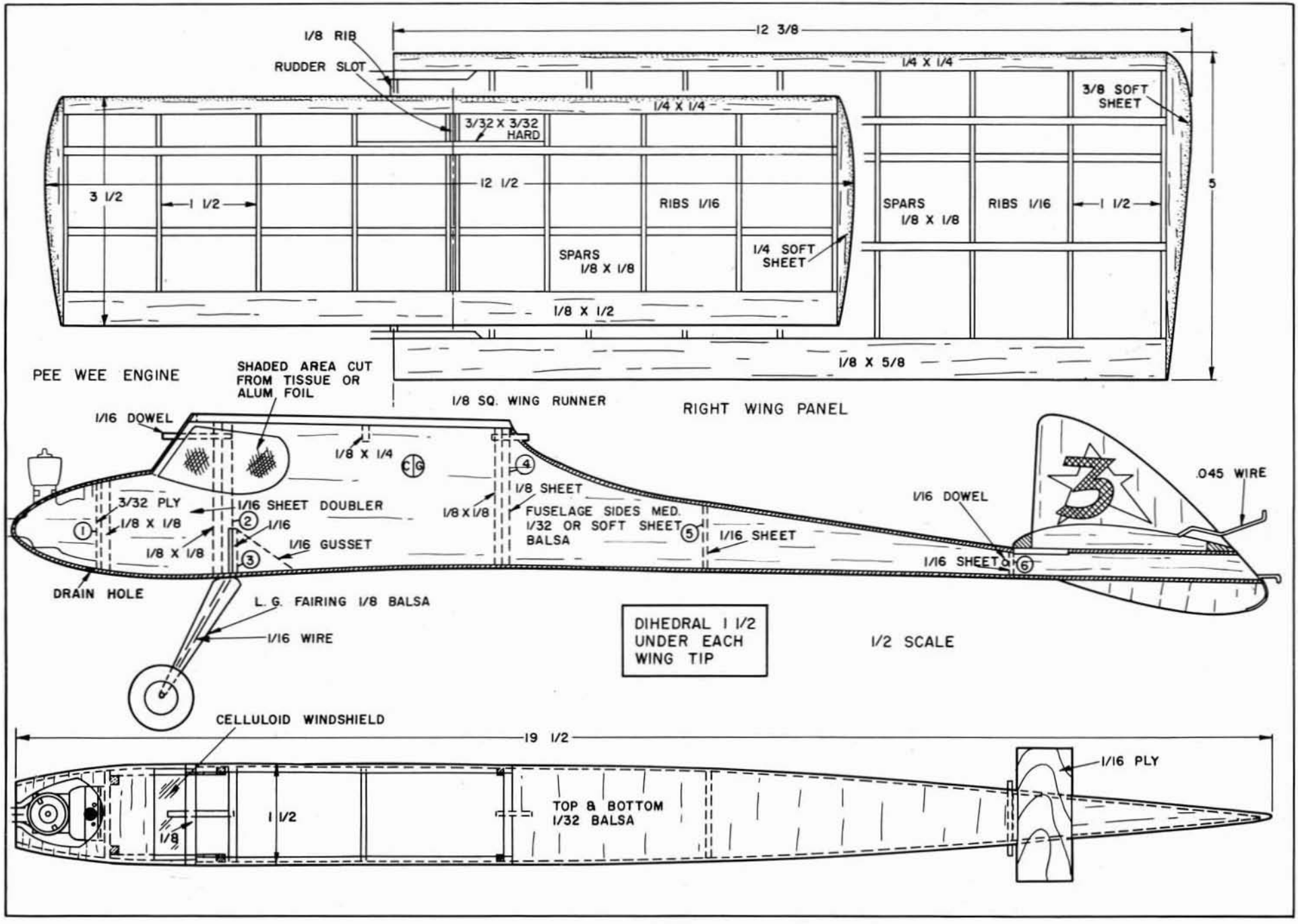
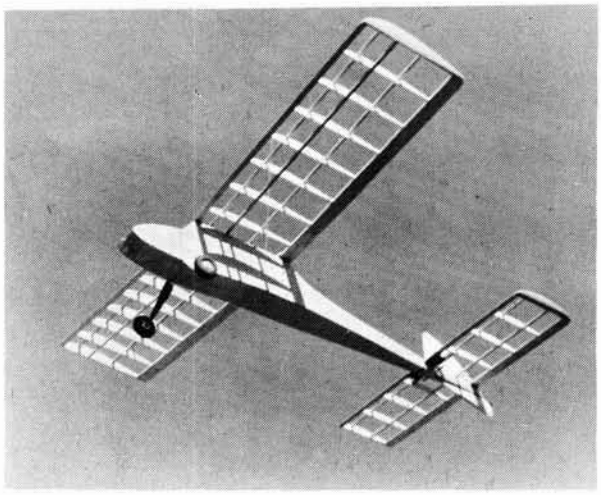

1/8 RIB
RUDDER SLOT
12 3/8
1/4 X 1/4
3/8 SOFT SHEET
1/4 X 1/4
3/32 X 3/32 HARD
3 1/2
1 1/2
12 1/2
RIBS 1/16
SPARS 1/8 X 1/8
1/4 SOFT SHEET
1/8 X 1/2
SPARS 1/8 X 1/8
RIBS 1/16
1 1/2
5
1/8 X 5/8
PEE WEE ENGINE
SHADED AREA CUT FROM TISSUE OR ALUM. FOIL
1/8 SQ. WING RUNNER
RIGHT WING PANEL
1/16 DOWEL
1/8 X 1/4
C G
3/32 PLY
1/8 X 1/8
1/16 SHEET DOUBLER
1/16
1/16 GUSSET
1/8 X 1/8
1/8 X 1/8
1/8 SHEET
FUSELAGE SIDES MED. 1/32 OR SOFT SHEET BALSA
1/16 SHEET
1/16 DOWEL
.045 WIRE
1/16 SHEET
DRAIN HOLE
L. G. FAIRING 1/8 BALSA
1/16 WIRE
DIHEDRAL 1 1/2 UNDER EACH WING TIP
1/2 SCALE
CELLULOID WINDSHIELD
19 1/2
1/16 PLY
1 1/2
1/8
TOP & BOTTOM 1/32 BALSA



Duster

Buster, you just ain't had fun till you fly a Duster. And this 'un is right from the "Pan Handle," which is why the western name.

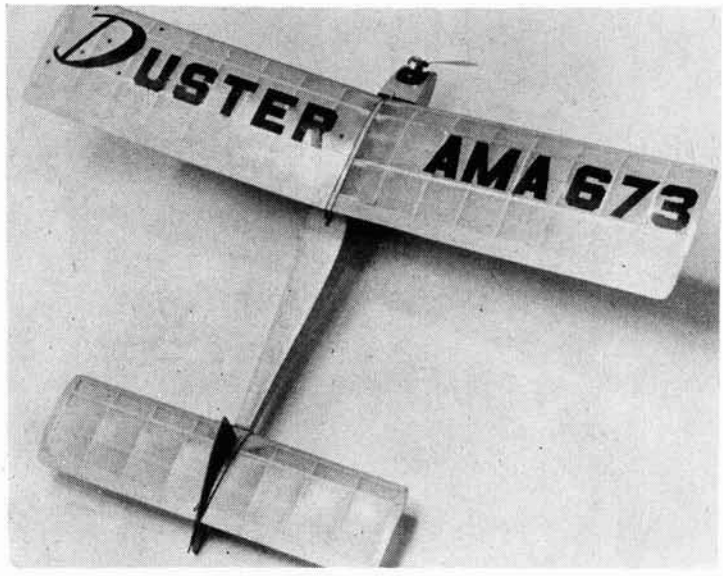
by Harry English

● We'd be afraid to count the models we've built in the last ten years that were strictly for contest work. The number would frighten us. Now don't misunderstand us—we're still a contest modeler and always will be, we hope, but everyone needs a change once in awhile. Duster provided that break from contest work. It's something to play with in the afternoons when you don't want to risk losing that new contest job that you've just finished trimming for next week's meet.

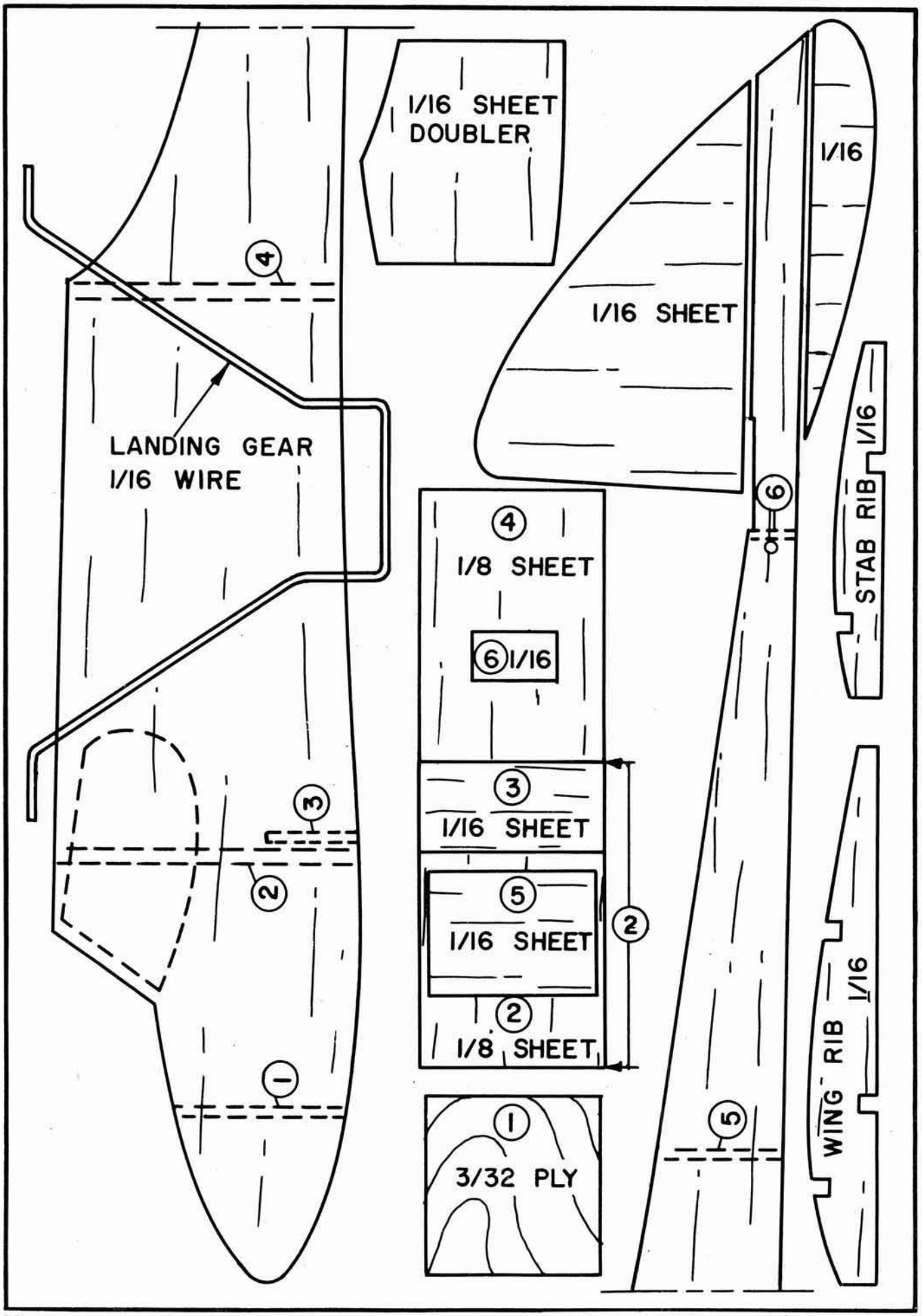
Try Duster and we promise it will be a barrel of fun for you, too. Incidentally, it wasn't planned that way, but the Duster could be adapted to the new PAAload rules.

WING AND STABILIZER: We always like to get the wing and stab surfaces out of the way first because that way they have a longer time to dry without warps, we hope) before covering. The Duster's construction is straightforward — plain

(Please turn to Page 43)



A couple of tricks with colored tissue supply the trim and license number. Said to be cool for Sport, the ship has go enough for meets.


1/16 SHEET
DOUBLER
1/16
1/16 SHEET
4
LANDING GEAR
1/16 WIRE
6
STAB RIB 1/16
4
1/8 SHEET
6 1/16
3
1/16 SHEET
5
1/16 SHEET
2
2
1/8 SHEET
1
3/32 PLY
WING RIB 1/16
5
3
2
1

a Perfect No. 6 tank and modify the fuel outlet and vents. The fuel draw tube should be located to draw fuel from a point ½ way down and about ¼" from the rear end of the tank. One vent is used. This vent runs through the bottom of the tank and ends as close to the top as possible. Install the tank in the position shown, cut through the center sheeting where necessary.

Bend the one wheel gear to shape and mount it to the 1/16" ply firewall. Drill the engine bearers to suit the engine used. Complete the fuselage by adding the remaining formers, top and bottom. Sand the entire wing and fuselage.

For convenience, we advise covering the wing at this point. Be sure the covering is securely stuck to the ⅛" ribs that serve as boom mounts.

The two ⅛" booms and horizontal tail may now be cut out. Cement the booms in place being sure to align them properly. Bolt the control horn to the elevator. We advise bending the pushrod wire before cementing the stab in place. Then you may slide the stab forward or back to give equal amounts of up and down. Add the pushrod guide and you are ready to finish the model. Apply several coats of thinned down clear dope and trim to your liking. We preferred the arrow like trim shown in the photos.

Flying is straight forward. We used 40-foot .010" diameter lines with a small handle.

When using the one vent tank described, fill the tank by holding the nose straight down and the inside wing low. This allows the tank to "breathe" through the fuel draw tube while fuel is being pumped in through the one vent.

When the engine is set, have your helper hold the model pointed out slightly and release it as you would any conventional model. Feel the ship out through several safely high and wide maneuvers and then, depending on your experience, proceed to more advanced maneuvers.

DUSTER

(*Continued from Page* 18)

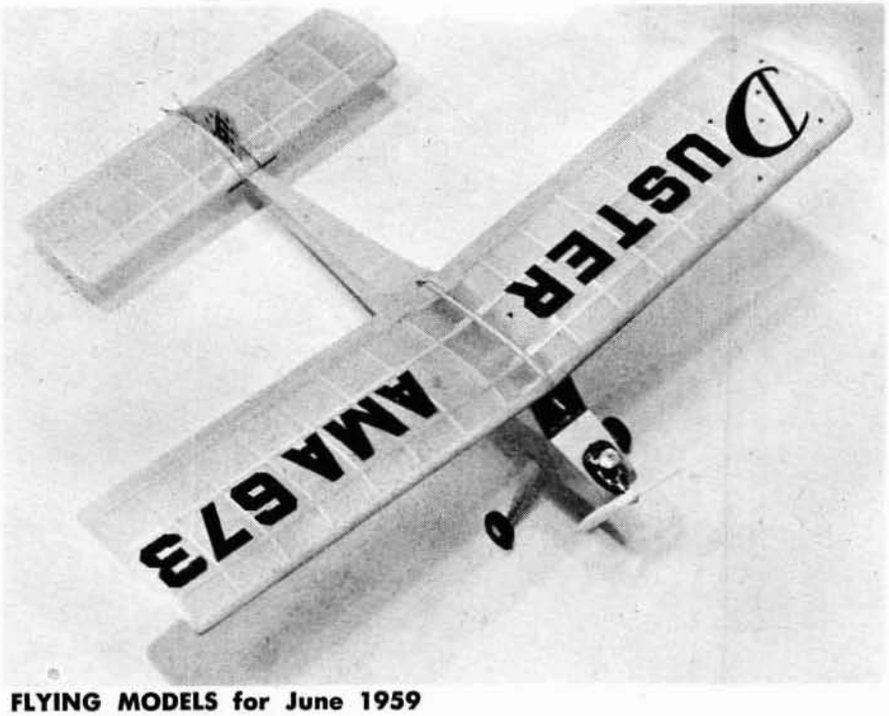
vanilla without any difficult twists.

We personally prefer cutting all the ribs first and sanding them in a pinned-together stack before inserting them in the wing or stab—supposed to be more accurace this way. Since Duster's wing and tail are multi-sparred, we didn't add the ⅛" x ⅛" spars until after the dihedral (1½" under each tip) had been blocked in and the cement thoroughly dry. Note that the spars in the stab go across the rudder slot and are not cut out at this point. Instead, the rudder is slotted for the spars and railing edge and inserted later, after covering.

We don't know how many fellows relly know how to put a good set of wing tips on a "square" wing—it's real easy—just cement some soft balsa sheet or block to the end rib flush with the bottom and wait for it to dry well. Now take a sharp knife or razor blade plane and shave the block down to the wing's top contour. Go ahead and sand the top until it is parrallel with the rest of the airfoil top. A good sandpaper block or razor plane (we don't know how we ever got along without ours!) is now used to taper the block from the bottom of the end rib to the top of the tip.

Done properly, after a little practice, this technique will give you the same outline shape on both tips without templates or any of that nonsense—works well on undercambered wings too!

Even though the Duster is primarily a sport job, let's not make it a workhorse; select fairly light wood! There's



no need to throw spruce spars into the wing—it simply doesn't need this kind of strength. It will take all kinds of punishment even built as a super lightweight job. Our model weighed a little over three ounces. Under the 1959 A.M.A. rules the power loading for an .020 is 3.47 ounces, a suitable weight for the Cox Peewee, if you should need to use Duster as a contest fill-in sometime.

FUSELAGE: The fuselage is constructed very simply, also. The sides, being cut from soft 1/16" balsa sheet, are pinned top to top on the work bench and the ⅛" vertical pieces cement in at the positions shown. This helps align the formers more accurately. Now, lift the sides and install the formers against these uprights and allow to dry, being sure everything is good and square — use a triangle! After all formers are cemented in place, cement the fuselage together at the tail end and check alignment again.

Now is the time to sandwich the landing gear in place. Cement several times to make sure it's never coming out. Cut and drill the firewall for your engine at this time, and mount the engine temporarily until you have positioned the mounting nuts in place behind the firewall. Cement won't hold these nuts to the firewall permanently but a square of music wire, say 1/32", soldered to the inside edge of all these nuts will enable you to remove the engine for thrust adjustments, cleaning, or to place balsa blocks inside the tank to shorten the engine run. The firewall is now cemented into the fuselage—cement like crazy!

Cover the fuselage top and bottom with 1/32" light balsa sheet and sand everything well. Add the landing gear fairings if you believe, as we do, that they add somewhat to the Duster's appearance. We cut our from scrap balsa trailing edge stock which was easy to carve into an airfold shape. Soldering the wheels on the gear is the only perfect method of keeping them in place but you may use ½A wheel retainers if you don't posses a soldering iron.

The entire model is now covered with colored Jap tissue and lightly doped and fuel-proofed—don't forget your A.M.A. numbers! A good way to judge a modeller's proficiency is in the way a good modeller always covers every portion of his model with whatever covering material he has chosen. A poor modeller, or a lazy one, might

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"Next stop—the moon." Ronald Gotsch joins the increasing ranks of model rocketeers. He's shown here with his Rock-A-Chute model rocket and launching tower. "Safe as a model plane," they say.

Due to the rear intake normally being inaccessable for choking purposes, a slight prime and several flicks are required for starting the RR-1. Some glow plug clips, not of the alligator or head clamp type, may not make proper electrical contact on the cylinder due to the protective cylinder coating. If this occurrs a few back and forth motions of the clip should be enough to break through this barrier. The needle adjustment for maximum rpm is fairly broad. The speed is above the capability of many rpm indicators but maximum rpm with any one prop can be determined by sound by most people. The balance of the prop, due to this high speed, is especially important. If the prop mounting screw is even slightly bent it might be wise to discard the neat aluminum spinner supplied and use a short screw and washer.

The plastic props, including nylon, in most cases allow a greater rpm than the wood props, perhaps due to their flexibility which allows them to flatten slightly under load. The RR-1 produced its maximum horsepower with medium pitch/5½" diam. props and low pitch/6" diam. props. The prop supplied, a 5" diam./4" pitch, appeared to allow maximum horsepower on the ground and therefore would be over the peak in flight, however it certainly makes a nice sound so why wory about a little power.

Using Thimble Drome racing fuel the following speeds were obtained:

7" diam./3" pitch Tornado—14,200 r.p.m.
6" diam/3" pitch Top Flite—17,400 r.p.m.
6" diam./2" pitch Tornado—16,800 r.p.m.
5¼" diam./3" pitch Tornado—17,800 r.p.m.
5¼" diam./3" pitch Top Flite—19,600 r.p.m.
5" diam./4" pitch Thimble Drome—18,100 r.p.m.
4½" diam./6" pitch Power Prop—16,900 r.p.m.

DUSTER

(*Continued from Page 44*)

decide not to cover, say, a balsa fuselage but instead will clear dope it and/or color dope it. This is not only poor craftsmanship but makes for an extremely weak model. The weight of tissue is negligible and the smoothness and strength it adds is well worth the small extra effort involved, even if the model is to be color doped later. Now add all dethermalizer hooks and wing and tail hold-down dowels, cementing well, and Duster's ready to fly.

FLYING: Do your first testing on a calm day; if it's a little gusty you won't be able to tell what effect your adjustments are having on the model. Test glide until the model glides well. Do not change the C.G. position which is about 1½" ahead of the wing's trailing edge. Changes in the glide are accomplished by adding incidence, a little at a time, under the rear of the stabilizer (if it has been diving) or under the front (if it's been stalling).

First power flights are made with the prop on backwards (but be sure the engine isnt' running backwards) and just a small amount of fuel in the tank. Any tendency to spin to one side or the other is deterred by adding a washer behind that side of the engine. Our Duster required no thrust changes at all and if yours has been built as instructed and has no warps it should fly right off the board.

Fuel should be measured into the tank or the tank may be partially blocked up with chunks of balsa to prevent runs that are too long. A full tank will lose your Duster for you so do a little experimenting with the amount of fuel you use to suit the flying area you use. Glide turn is obtained by cementing thin pieces of balsa to the stab platform on the side inside the glide circle. The airplane will always turn in the direction of the highest stabilizer tip. Don't forget the dethermalizer fuze or you'll have to build a second Duster!

A few friends have shown some interest in using a Duster for Radio Control work. In fact, we went to the trouble of obtaining a C.G. RX-1 receiver for use in a slightl ylarger version powered by a small .03 foreign diesel. But we haven't gotten around to it yet. The Duster could, however, be flown as is, with a "fatter" fuselage, of course, to accommodate any small receiver. We've seen lots of .020 R/C jobs smaller than the Duster.