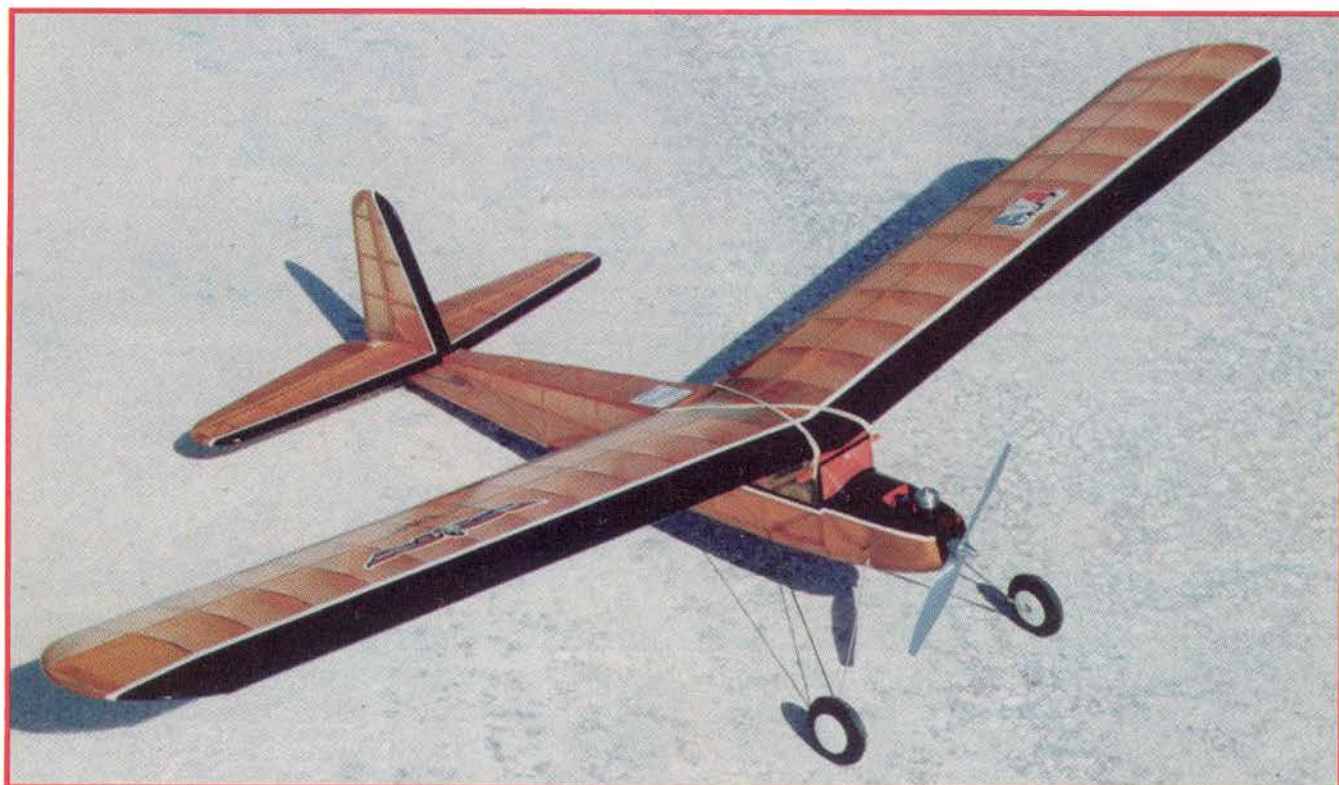


DALLAIRE SPORTSTER (1/2A TEXACO)

Text By Stuart L. Richmond
Plans and Construction By Lou Davila

Building And Flying 1/2A Texaco R/C Models Is Great Fun



The models are simple in structure, cost very little to build, transport easily due to small size, and they fly beautifully. And if you're contest-minded, SAM (Society of Antique Modelers,

\$15./year for dues and rules to Larry Clark, P.O. Box 528, Lucerne Valley, CA 92356) holds low-key fun-type contests all over the USA for these models. These are SAM's most popular models in com-

petition! Cox even makes a special #4506 Texaco .049 that looks like their Black Widow but is subtly altered to turn a 7 x 3-1/2 around 9,000 rpm for about six minutes of climbing power. I call it a



The Dallaire Sportster's classic lines and simple construction are apparent.



About The Builder

A life-long model airplane builder, Lou spent 26 years in the United States Air Force working on missile systems. Lou recently retired from Martin-Marietta Aerospace as an engineer doing integrated logistics planning on the Hellfire missile. Lou loves small R/C models and feels any model with a .25 or bigger engine is a giant. He's currently working on ducted fans with a Cox .020 TD engine.

"Coxaco" engine as do many others. Contests are usually won with two 15-minute flights and an unlimited duration third flight to break ties.

Best of all, the rules allow you to scale down your favorite best-remembered gas job design from before December 31, 1942. The best flying 1/2A Texaco models seem to have 300-350 sq. in. of wing area and the wing loading minimum is 8 oz./sq. ft. of wing area. If you're a scale lover, the newest SAM event is for 1/2A Texaco scale models of the same vintage. If you design your own and it flies well, you may stand a good chance of getting it published here in *RCM*!

My good friend, Lou Davila, loves small models. One of Lou's all-time favorite gas-powered free flight designs was the Dallaire Sportster. It was kitted by the Dallaire Model Aeroplane Company in 1936, had a 108" wingspan (it was huge for its time) with over 10 sq. ft. of wing area and it looked like a sleek real airplane. It sported a rounded windshield, enclosed cabin with see-through windows, and had stringers forming a rounded lower fuselage section. In those days, it was a kid's "dream model" and it still looks good today. Lou found an original set of Dallaire Sportster plans in Dan Lancaster's archives (nice name for real old model stuff) and then bought ModelCAD (\$99.00 from ViaGrafix, at: One American Way, Pryor, OK 74361 -- they usually advertise here in *RCM*) and the plans you see here are Lou's results.

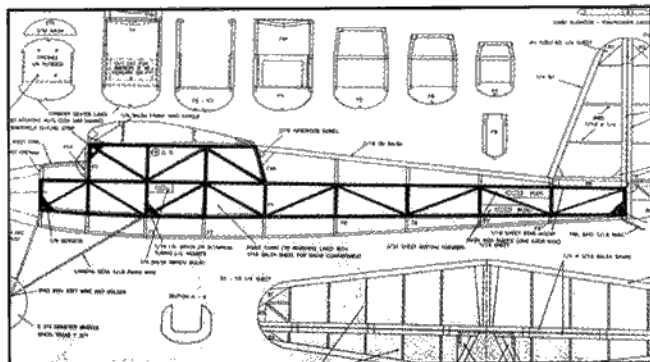
For Sunday Fun flying, Lou uses a P.A.W. .03 diesel bought from Doctor

Diesel (Eric Clutton, 913 Cedar Lane, Tullahoma, TN 37388) and his Cannon radio system's two servos are augmented by a tiny Tower Hobbies servo to operate the P.A.W.'s R/C carb so he has throttle control along with rudder and elevator. One photo shows the P.A.W. .03 and the simple plywood engine mount Lou made that matches the mounting bolt pattern of the Coxaco, so the two engines easily interchange. For contest work, the Tower servo comes out to save weight and the Coxaco goes in with a 7" or 8" prop.

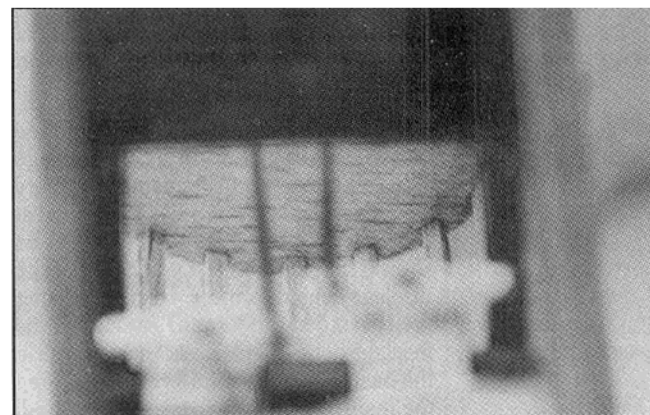
It's interesting how the name "Texaco" originated with model airplanes. In the 1930's Texaco Company sponsored many model plane contests and the publicity they derived has lasted for over 60 years. The volume of fuel for the model engine was allotted by total model flying weight. A larger and heavier model was allotted more fuel for its engine to run longer and maybe get the model up as high as a smaller and lighter model; it was an interesting concept that worked.

Today's 1/2A Texaco models are allotted 8cc's which is the capacity of the tank on the Coxaco engine. The newer and larger A Texaco models (a SAM provisional event) allow engines through .20 displacement and allots 14cc's of fuel which is about a half ounce as held by a Perfect #5 metal fuel tank.

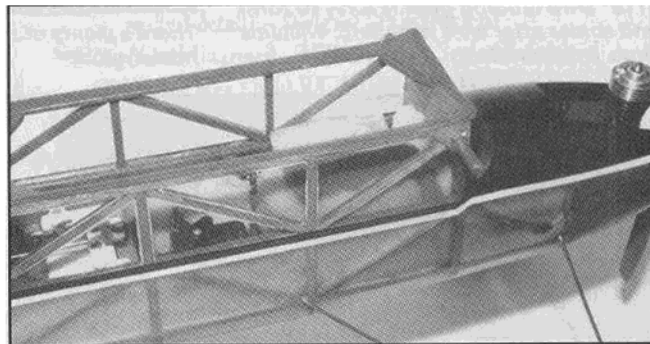
For windy weather flying, it's a good idea to have your model a bit nose heavy



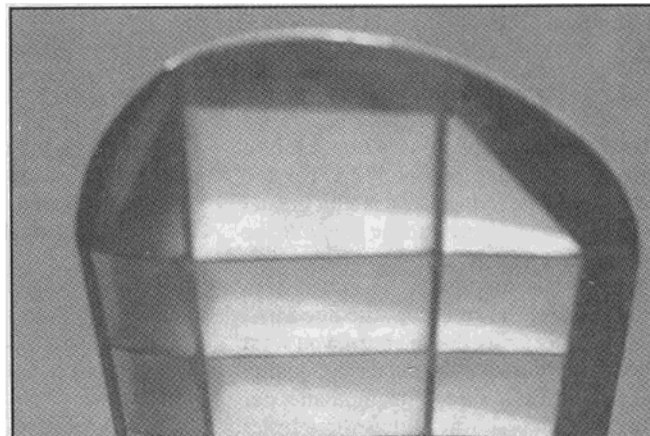
Construction begins by building two fuselage sides over darkened lines.



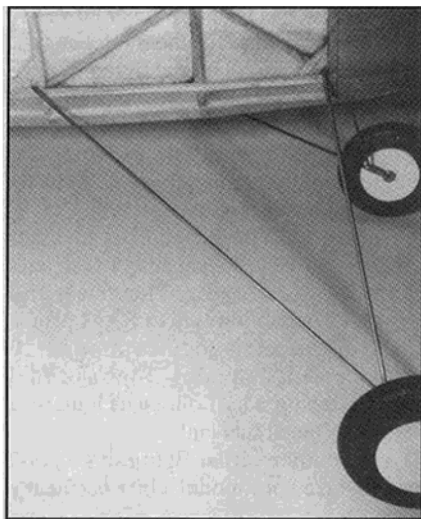
Camera is focused on lower fuselage former and stringers that round out the lower fuselage section.



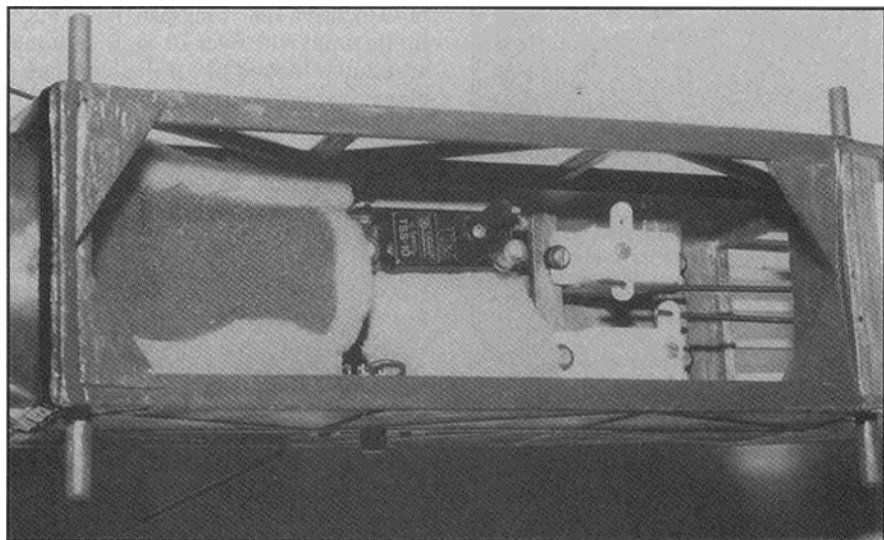
Cabin framework was painted before windows are glued in place.



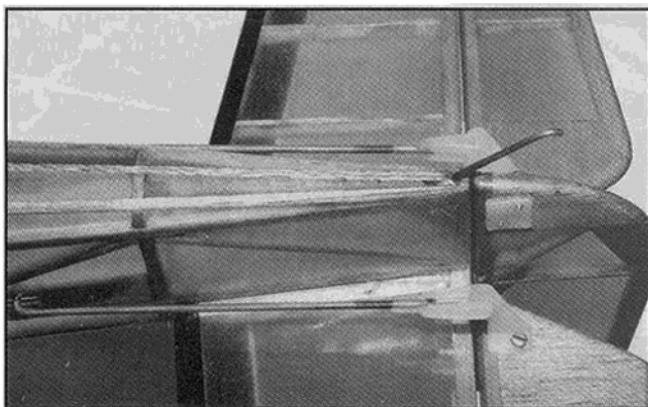
Covering should be stuck to the bottom of the wing ribs to take advantage of undercamber. Note simple construction.



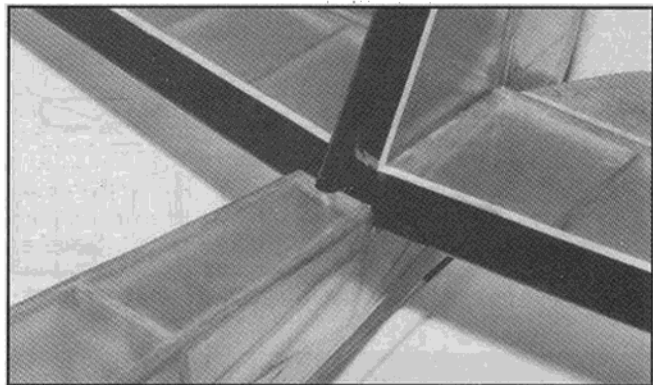
1/16" wire landing gear is easy to form and solder after wire wrapping. Williams Bros. light wheels.



There's plenty of space for standard R/C equipment. Lou chose the 3-channel Cannon mini-system.



Small Carl Goldberg horns drive rudder/elevator. 1/16" tail skid.



White 1/8" tape gives nice demarcation between black leading edges and orange covering.

(Norm Rosenstock adds a 2 oz. blob of clay to the nose of his 1/2A Texaco models), so the flying speed is a bit greater and it's easier to penetrate the winds so the model doesn't get blown downwind. There's also some luck, art, and skill in maximizing the run from the 8cc tank. Since oil normally doesn't burn, you want a modest volume of the maximum quality oil in your fuel. Since nitromethane, per unit of volume, burns almost three times faster than methanol, you want to avoid high nitro fuels. I use Powermaster's

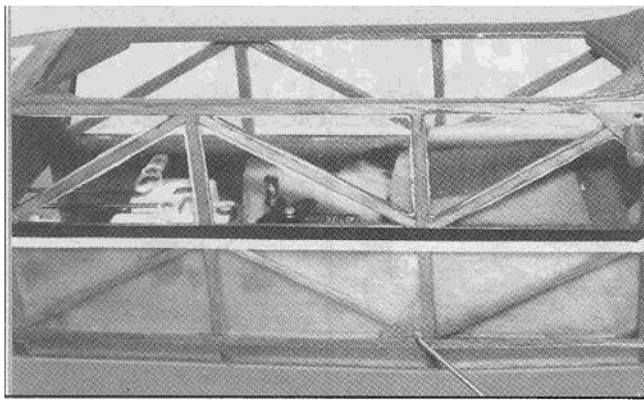
Golden Break-In Fuel and I've finally won a 1/2A Texaco contest after trying for two years. If the Coxaco engine makes a cackling or cracking sound as it runs, it is preigniting or detonating (the fuel is igniting too soon on the compression stroke) and an extra head gasket or two should be added to retard ignition until the cackling sound disappears to get maximum engine performance.

CONSTRUCTION

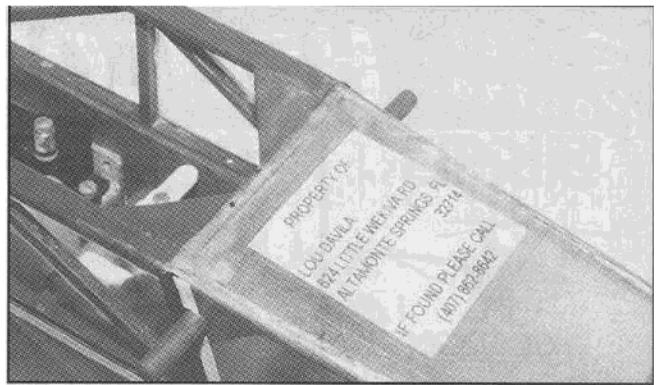
Fuselage:

Construction is ultra-simple as you can

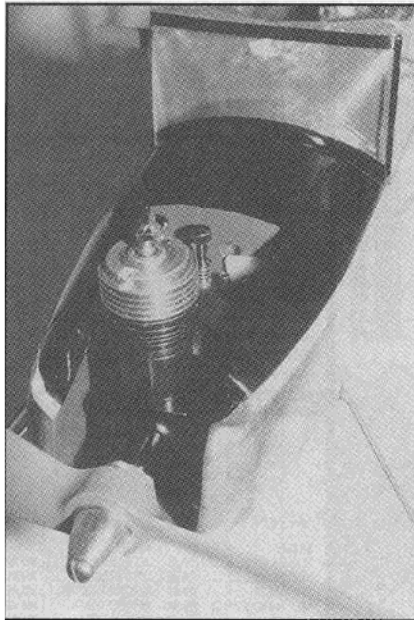
see from the photos of Lou's finished model. Begin by building two fuselage sides over the dark lines using rock hard 1/8" x 1/8" balsa. The sides are joined at the rear and separated by formers as shown in the plans. That section of the fuselage behind former F4A is added after the two sides are joined. The top of the fuselage behind F4A is a bit narrower than the basic fuselage framework. By lining the inside of the two fuselage sides with 1/16" balsa and by sheeting a 1/16" floor across the bottom of the fuselage as far



Black 1/8" tape highlights windshield and side windows.



These 1/2A Texaco models fly high and can be lost. Name/address on outside is smart!



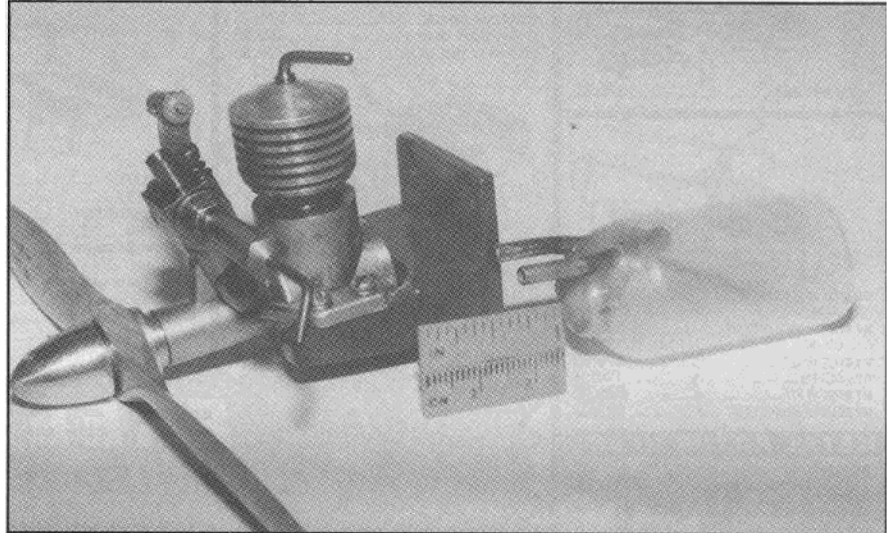
Cox Hobbies makes this special #4506 Texaco .049, but any similar Cox engine is suitable for noncontest R/C fun.

back as the rear wing dowel, you build a box to take your radio installation. It's simple, easy, and quick construction. The nine semi-circular lower fuselage formers set the fuselage width and hold the seven stringers that round out the lower fuselage section so nicely. The only plywood is the 1/8" fire wall on which you mount your engine.

Wing and Tail Sections:

Choose the hardest balsa you can find for the four wing spars. Begin construction by putting down the bottom front spar, adding the bottom of the trailing edge, then the ribs, followed by the top of the trailing edge and the two upper spars, then the leading edge. The bottom rear spar and sheer webbing is added after the wing comes off the plans. The wing tips can be pulp-soft balsa.

The tail is built of medium wood with pulp-soft tips again. Lou cut Sig's Easy Hinges to half width and used three narrow hinges on the rudder and three more on each half of the elevator. Coloring and decorating is highly personal. These



Lou uses this P.A.W. .03 for sport flying. Plywood engine mount matches bolt-mounting holes of Coxaco engine. Easy interchangeability.

1/2A DALLAIRE SPORTSTER

Designed by:
Lou Davila
TYPE AIRCRAFT
1/2A Sport/Texaco
WINGSPAN
52 Inches
WING CHORD
6-3/4 Inches
TOTAL WING AREA
341 Sq. Inches
WING LOCATION
High Wing
AIRFOIL
Undercambered
WING PLANFORM
Constant Chord
DIHEDRAL, EACH TIP
3-3/8" (At Last Rib)
OVERALL FUSELAGE LENGTH
25-3/4 Inches
RADIO COMPARTMENT SIZE
(L) 6-1/2" (W) 2" (H) 2-3/4"
STABILIZER SPAN
18-1/4 Inches
STABILIZER CHORD (inc. elev.)
3-1/4 Inches (Avg.)
STABILIZER AREA
60 Sq. Inches
STAB AIRFOIL SECTION
Flat
STABILIZER LOCATION
Top Of Fuselage

VERTICAL FIN HEIGHT
7-1/2 Inches
VERTICAL FIN WIDTH (inc. rud.)
4 Inches (Avg.)
REC. ENGINE SIZE
.035-.05 Diesel/.049 Glow
FUEL TANK SIZE
1/2 (8cc's)
LANDING GEAR
Conventional
REC. NO. OF CHANNELS
2-3
CONTROL FUNCTIONS
Rud., Elev., Throt.
C.G. (from L.E.)
2-3/4 Inches
ELEVATOR THROWS
5/16" to 1/2" Up — 5/16" to 1/2" Down
AILERON THROWS
NA/NA
RUDDER THROWS
1/2" Left — 1/2" Right
SIDETHRUST
0
DOWNTHRUST
2°
BASIC MATERIALS USED IN CONSTRUCTION
Fuselage Balsa, Plywood
Wing Balsa, Plywood
Empennage Balsa
Wt. Ready To Fly 19-21 Oz. (1Lb. 3 Oz.)
Wing Loading 8.9 Oz./Sq. Ft.

models look great with transparent MonoKote or other iron-ons; I love the see-through yellow Micafilm by Coverite on my models. Lou is a life-long modeler (Dave Thornburg calls us "lifers" in "**Do you speak model airplanes?**") and is a purist who chose to cover this model in orange silk and used Sig's clear butyrate dope; enough coats he says, until it looked "about right." A small bottle of black, painted on, gives good contrasting color and 1/8" white tape highlights between the orange silk and the black butyrate dope. The window framework was painted with orange before the clear windows were added, a pretty touch of class!

The wing's airfoil is undercambered

and the covering you use should be carefully adhered to the **bottom** of the wing ribs and to the lower wing spars to maximize flight performance.

Lou's Dallaire Sportster weighs 21 oz. with the Coxaco engine. He carries a bit of nose weight with the P.A.W. and the 270 mAh pack was made from Sanyo cells bought at TNR, the battery people located in Florida, and who often advertise here in *RCM*. Williams Bros. #140 wheels are used. One photo shows the 1/2 oz. fuel tank made from a medicine bottle (eye drops) for the P.A.W. diesel. That tank mounts/fits in the fuselage centered below the front wing dowel and the two fuel tubes go through the ply fire wall to feed

the engine which runs about **nine** minutes on this small fuel tank. Lotsa fun! This 52" span model is flying at 8.9 oz./sq. ft. wing loading and seems to handle average breezes beautifully.

If all this sounds interesting to you, why not mail \$7.00 to RCM for Plan #1248, get a Coxaco engine at your local hobby shop, and start building your own Dallaire Sportster.

If you finish a 1/2A Dallaire Sportster from Lou Davila's plans, we'd welcome a photo mailed to "Lou & Stu" c/o RCM, P.O. Box 487, Sierra Madre, CA 91025. Enjoy!

