You'll Find it Fun to Fly This Flettner-type Rotor Wing Control Line Model

Nothing hard about this project! Best of all it's a great flyer

By ROY L. CLOUGH, JR.

• This novel control line model gets its lift from a pair of whirling Flettner-type rotors which spin automatically in flight.

Easy to build and fly, the model is practically crash-proof because the rotors will keep turning whether the motor is running or not.

Although the model moves along at a fairly good clip in normal flight, it can be made to practically hover on the upwind side of the circle if the nose is raised a bit. Center of gravity location in relationship to the rotor axis is not very critical so a wide variety of small engines may be used without altering the model. It is important, however, to have the control line guide set to allow the model to nose slightly out of the circle, the same as for any ukie.

Construction is of the profile type. Fuselage is cut from medium hard 1/4" sheet balsa. Motor mount is a plywood disk held rigidly in place by blocks cemented on either side. Landing gear may be held either between the plies of the nose disk or simply be set in a groove in the face of the disk and held in place by the rear of the engine tank. Control horn and bellcrank are of the 'Tee' or Firebaby type which are the best for profile fuselages.

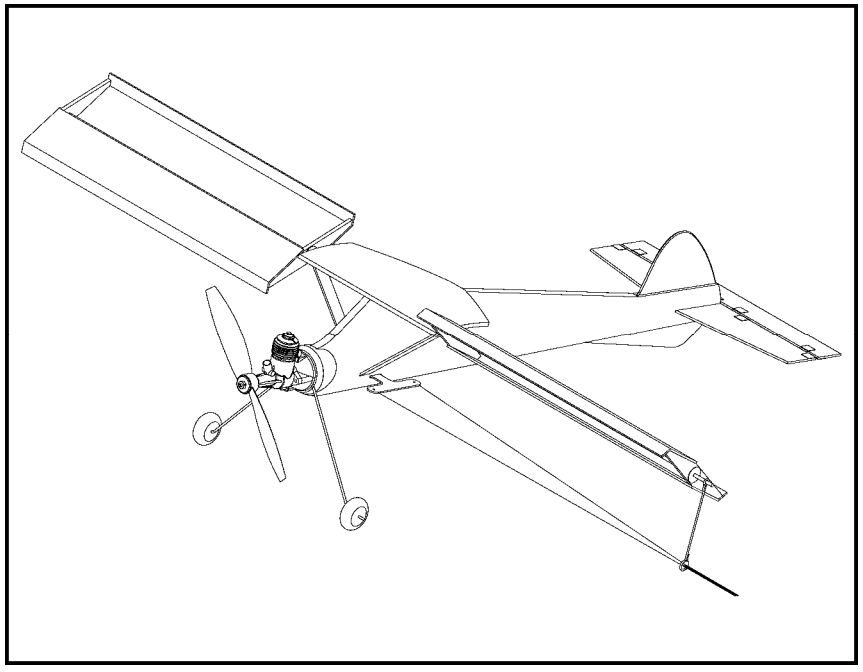
A short wing stub fills the center section. A cabane strut on each side acts as a brace. This provides support for the 3/32" wire rotor axle and allows a clear wash-way to the tail surfaces. If you run the rotors right up to the fuselage sides their interference will make elevator control uncertain at low speed.

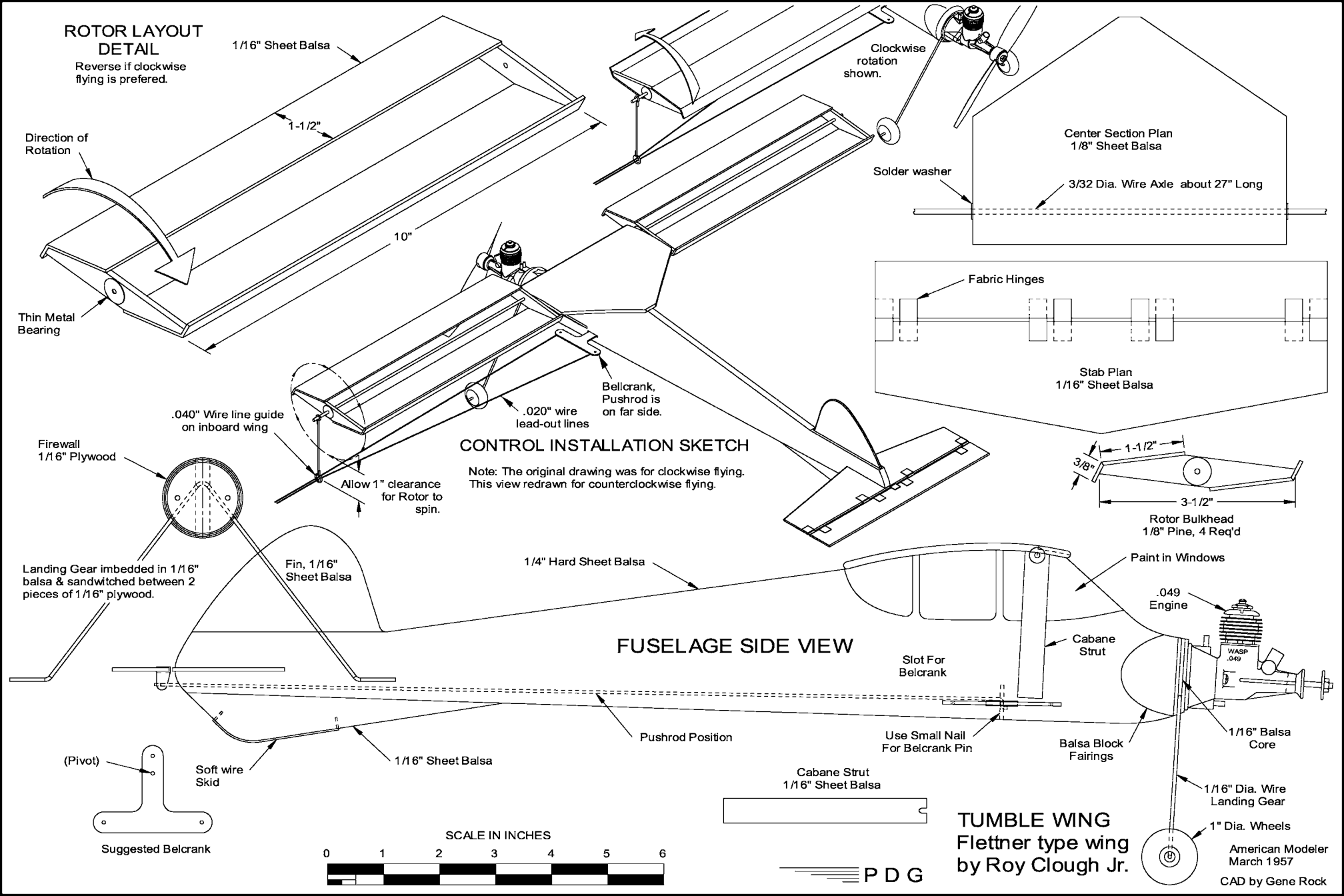
Construction of the rotors is simple, but should be followed closely for best results. The open center design was chosen after experiment with several types, indicated this design allowed the best forward speed maximums and mini-mums. It is essential that the rotors be mounted as shown, so that the rotation is to the rear at the top. If the rotors are installed backwards the model will not lift since the rotor thrust will be downward instead of up.

The line guide is soldered to the tip of the inboard axle and is bent slightly to the rear to insure the correct amount of nose-out without the necessity of a separate rudder adjustment.

When you have your rotor-wing craft in operation, get a friend to snap a photo for the magazine. American Modeler pays $10 apiece for the individual "shots" used with its column reports!

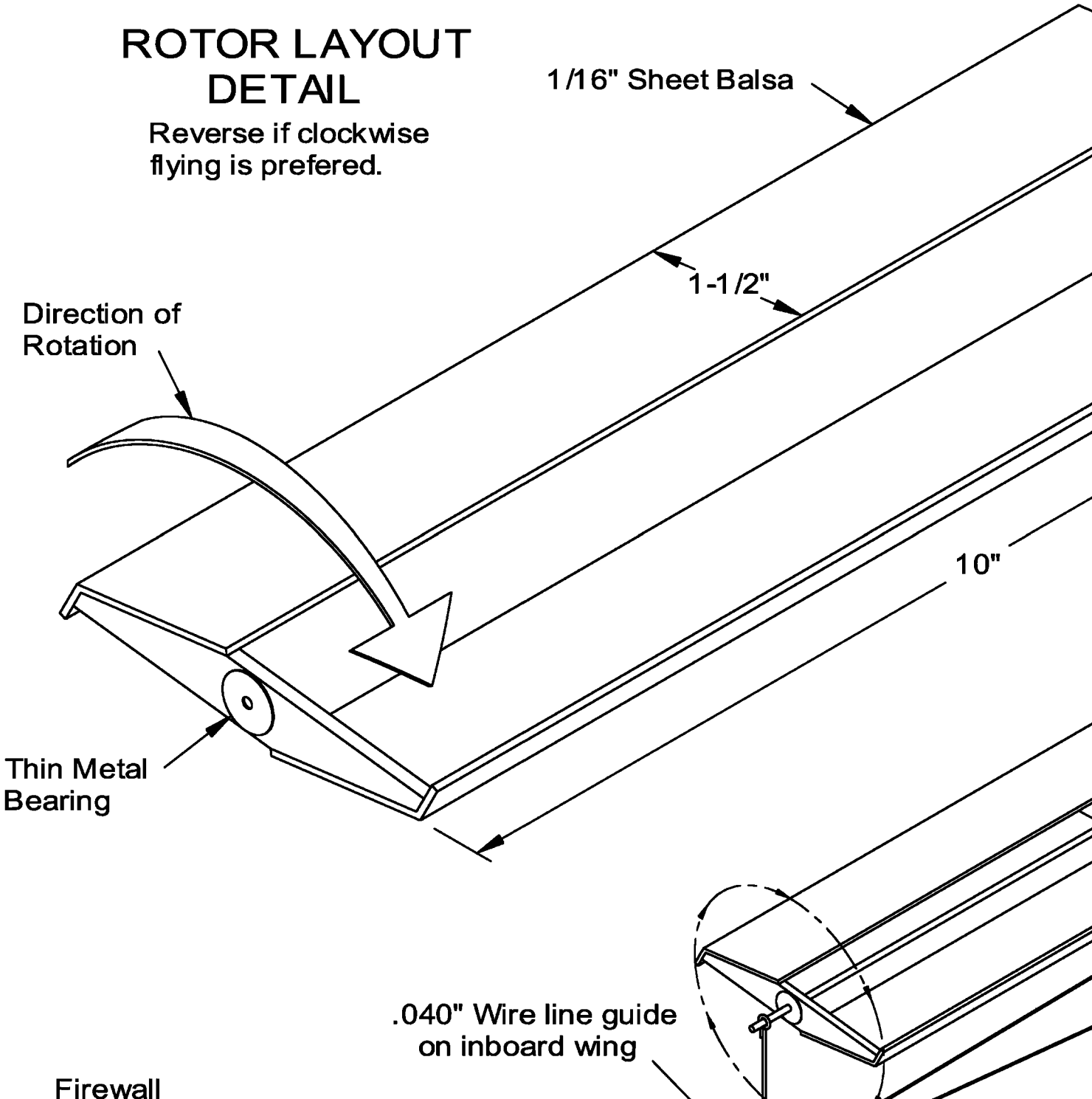
Full size plans for Flettner-type Rotor Wing on Plan No. 357 from Hobby Helpers, 770 Hunts Point Ave.. New York 59. N. Y. (50c).

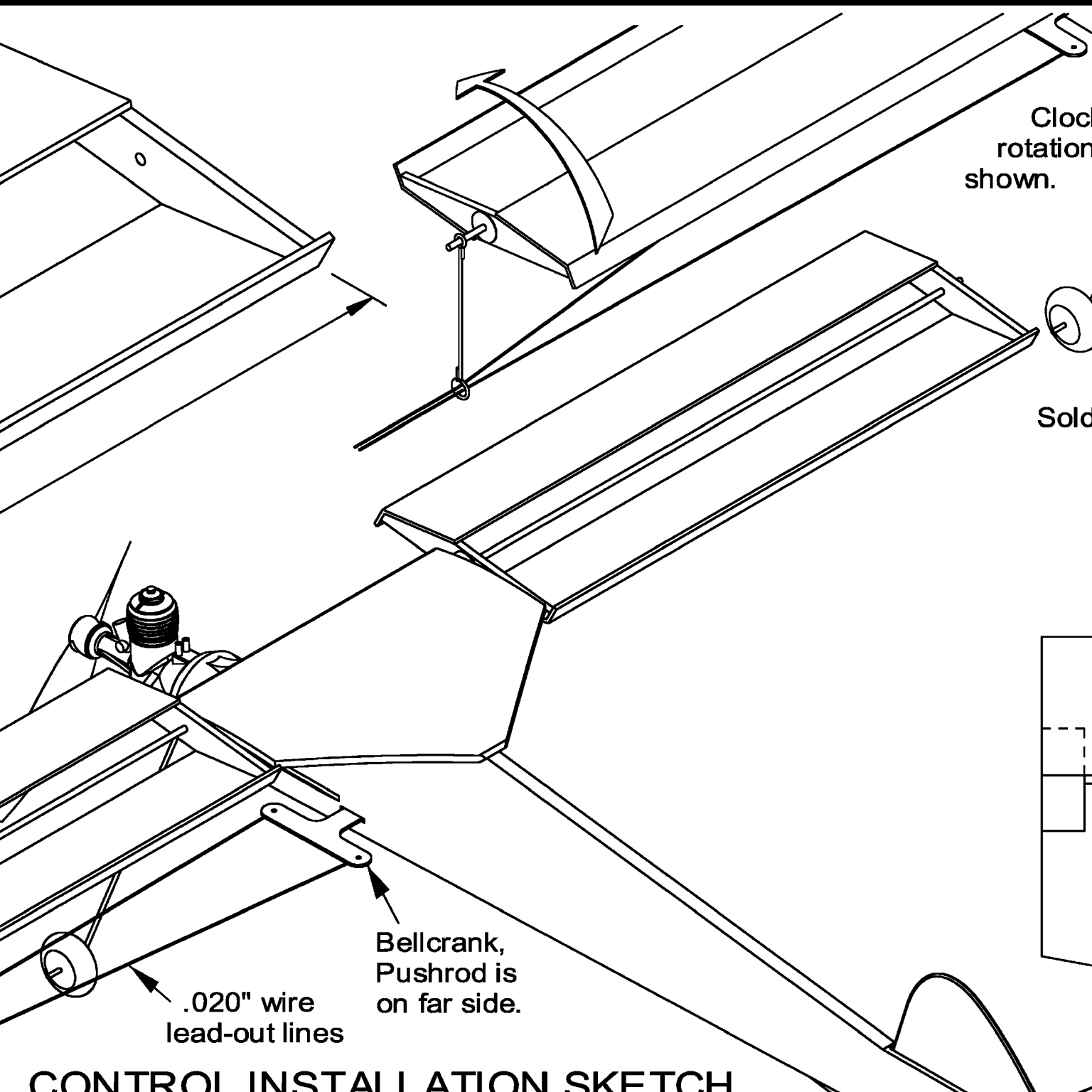



ROTOR LAYOUT DETAIL
Reverse if clockwise flying is prefered.
1/16" Sheet Balsa
1-1/2"
Direction of Rotation
10"
Thin Metal Bearing
Clockwise rotation shown.
Center Section Plan
1/8" Sheet Balsa
Solder washer
3/32 Dia. Wire Axle about 27" Long
Fabric Hinges
Stab Plan
1/16" Sheet Balsa
Bellcrank, Pushrod is on far side.
.020" wire lead-out lines
.040" Wire line guide on inboard wing
Allow 1" clearance for Rotor to spin.
CONTROL INSTALLATION SKETCH
Note: The original drawing was for clockwise flying.
This view redrawn for counterclockwise flying.
1-1/2"
3/8"
3-1/2"
Rotor Bulkhead
1/8" Pine, 4 Req'd
Firewall
1/16" Plywood
Landing Gear imbedded in 1/16" balsa & sandwitched between 2 pieces of 1/16" plywood.
Fin, 1/16" Sheet Balsa
1/4" Hard Sheet Balsa
Paint in Windows
.049 Engine
FUSELAGE SIDE VIEW
Cabane Strut
Slot For Belcrank
WASP .049
Pushrod Position
Use Small Nail For Belcrank Pin
Balsa Block Fairings
1/16" Balsa Core
(Pivot)
Soft wire Skid
1/16" Sheet Balsa
Cabane Strut
1/16" Sheet Balsa
1/16" Dia. Wire Landing Gear
1" Dia. Wheels
Suggested Belcrank
SCALE IN INCHES
0 1 2 3 4 5 6
P D G
TUMBLE WING
Flettner type wing
by Roy Clough Jr.
American Modeler
March 1957
CAD by Gene Rock

ROTOR LAYOUT DETAIL

Reverse if clockwise flying is prefered.





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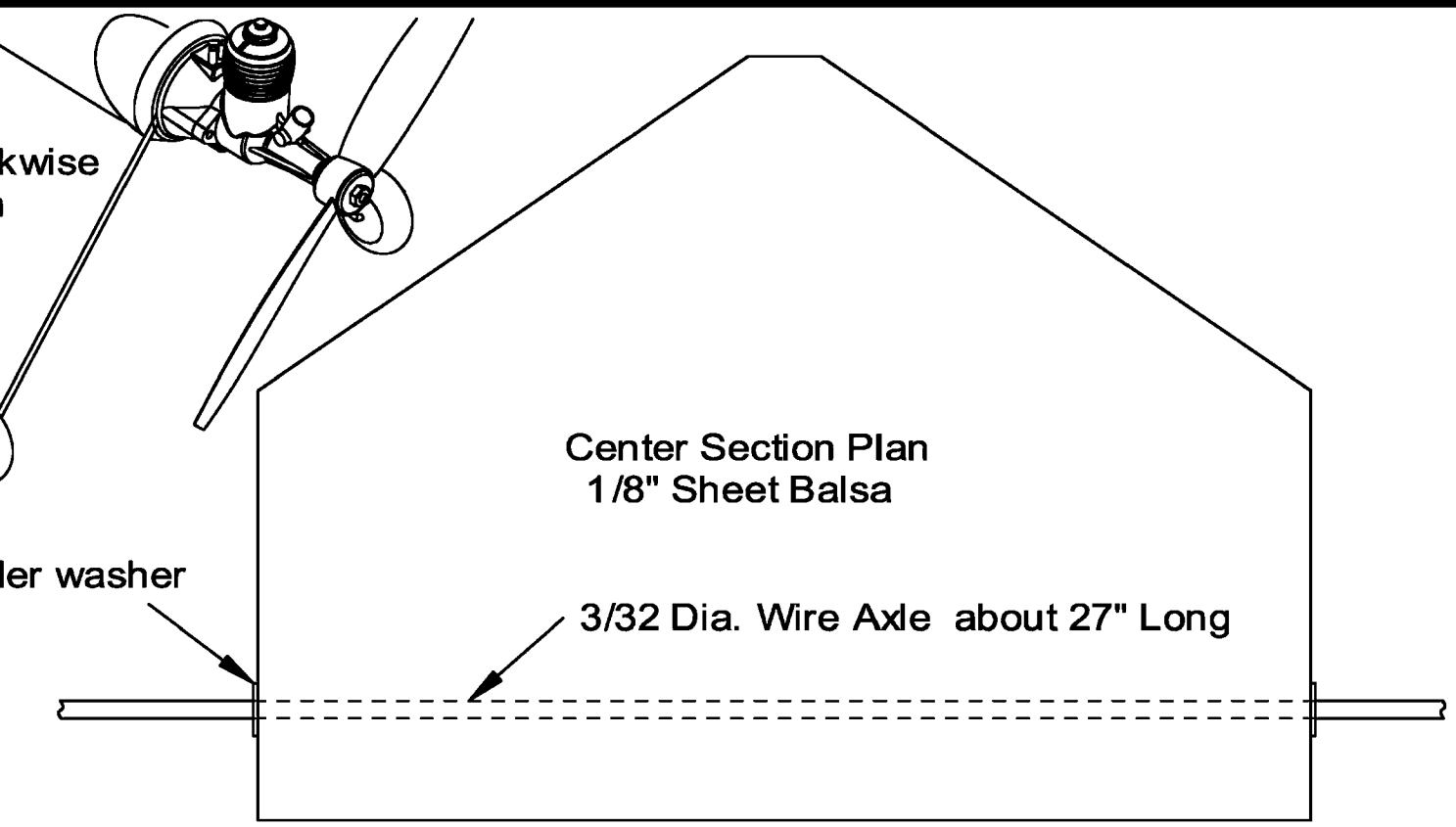
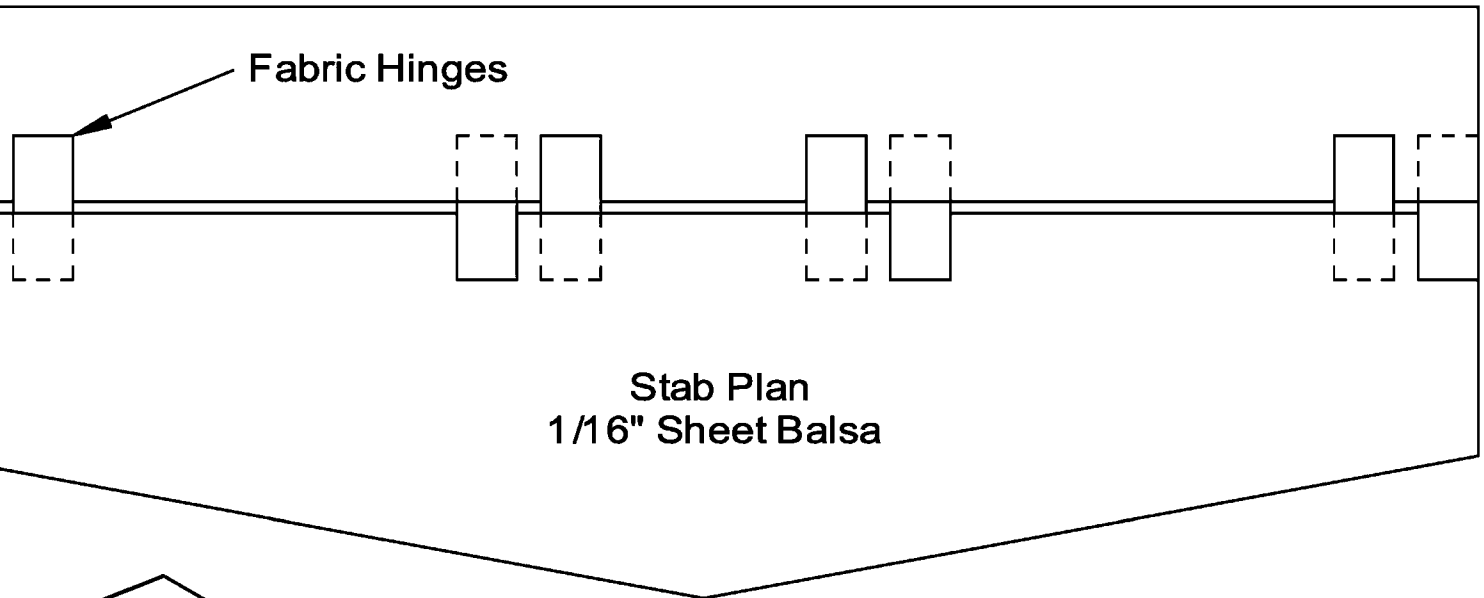
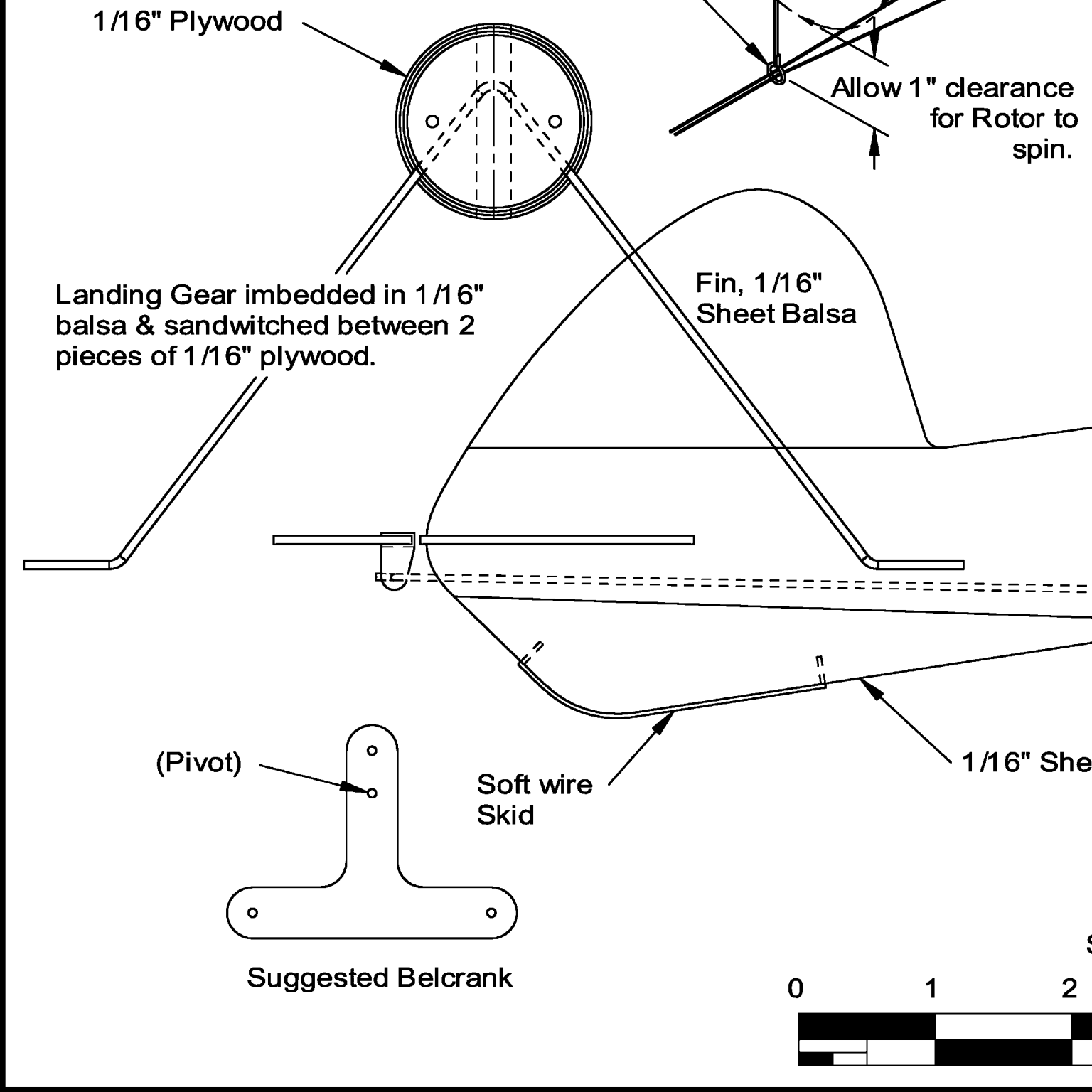

kwise
Center Section Plan
1/8" Sheet Balsa
ler washer
3/32 Dia. Wire Axle about 27" Long


Fabric Hinges
Stab Plan
1/16" Sheet Balsa


1 1/2"


1/16" Plywood
Allow 1" clearance for Rotor to spin.
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Fin, 1/16" Sheet Balsa
(Pivot)
Soft wire Skid
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Suggested Belcrank
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1
2

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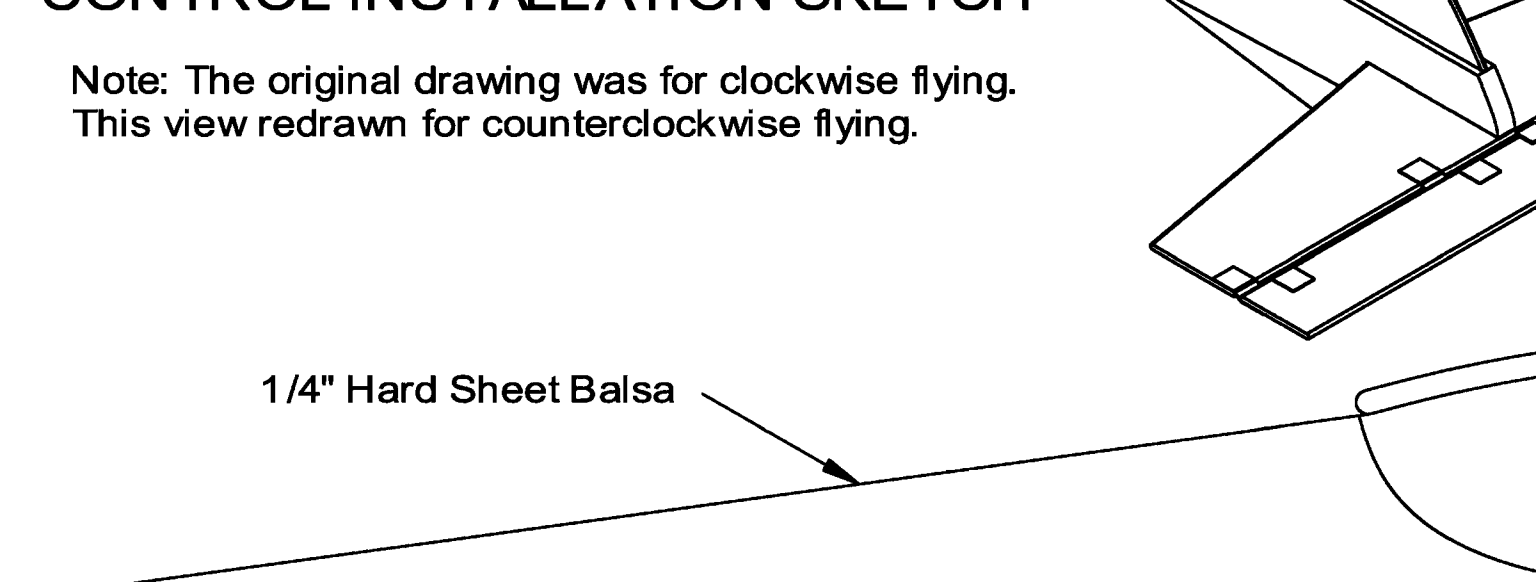
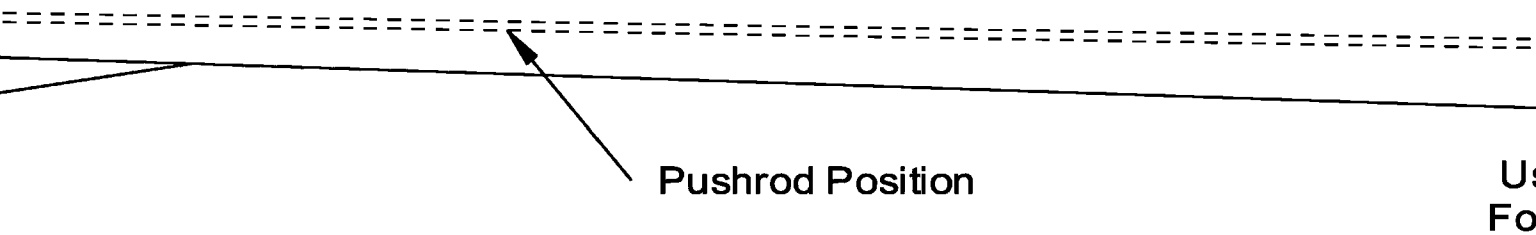


FUSELAGE SIDE VIEW

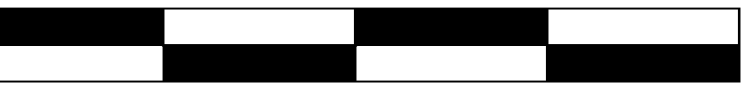


et Balsa

Cabane Strut
1/16" Sheet Balsa

SCALE IN INCHES

3 4 5 6



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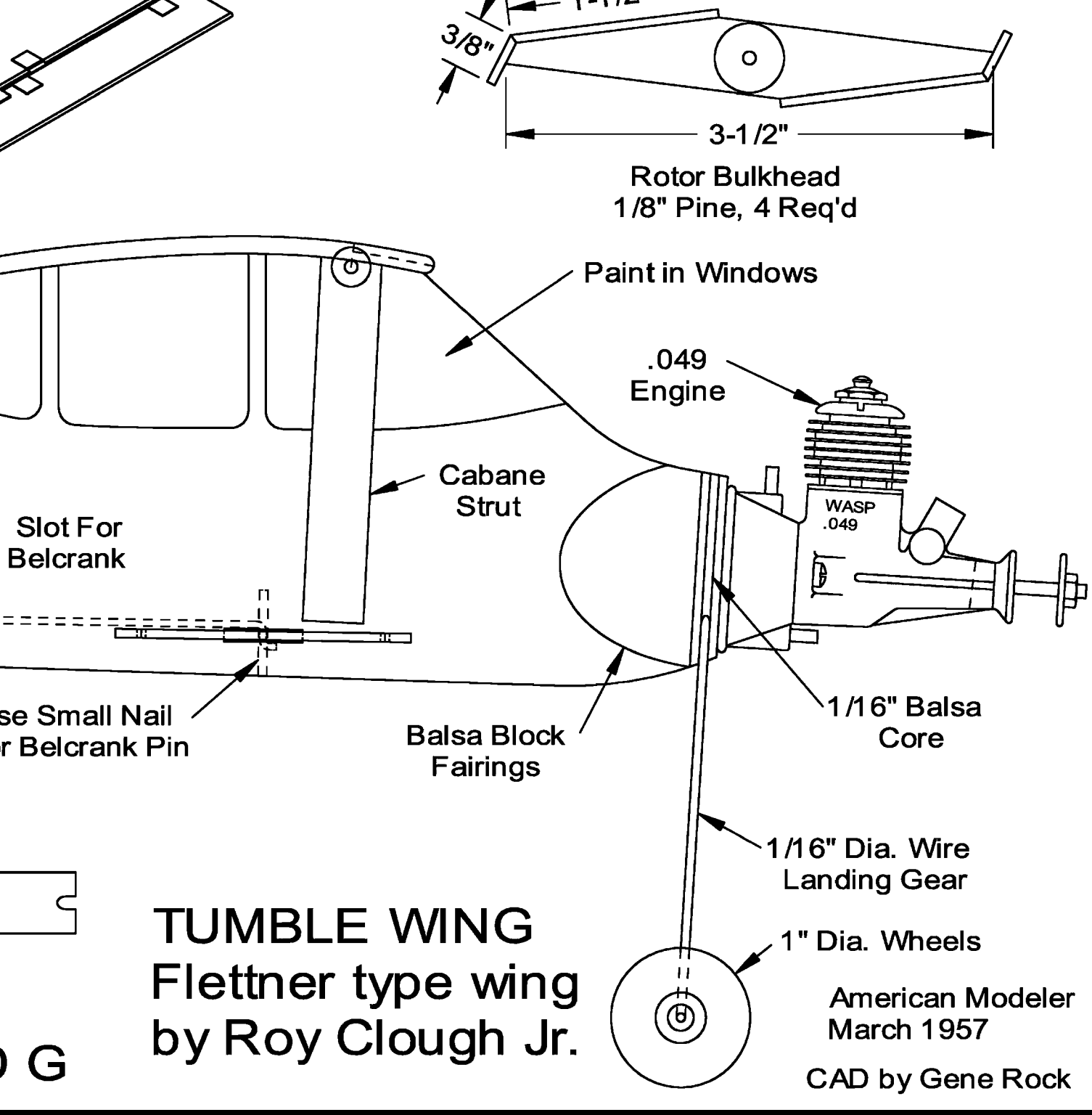
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