ANOTHER RENOWNED PIONEER!

IN THIS SECOND OF HIS SERIES OF HISTORY MAKING SHIP, HENRY STRUCK BRINGS YOU THIS FAMOUS BLERIOT MONO PLANE, THE ORIGINAL OF WHICH MADE A FLIGHT AS EPOCH IN ITS DAY AS LINDBERGH'S TRANS-ATLANTIC HOP—THE FIRST FLIGHT ACROSS THE ENGLISH CHANNEL. YOUR MODEL MAY NOT BE QUITE CAPABLE OF SUCH A TRIP, BUT YOU'LL FIND THAT IT'S A TOPNOTCH FLYER JUST THE SAME—AND AN A-1 DISPLAY JOB TO BOOT. SO GET OUT YOUR BALSA AND START BUILDING—

Bleriot's Channel Conqueror

TRAIL BLAZERS OF THE AIR—NO. 2

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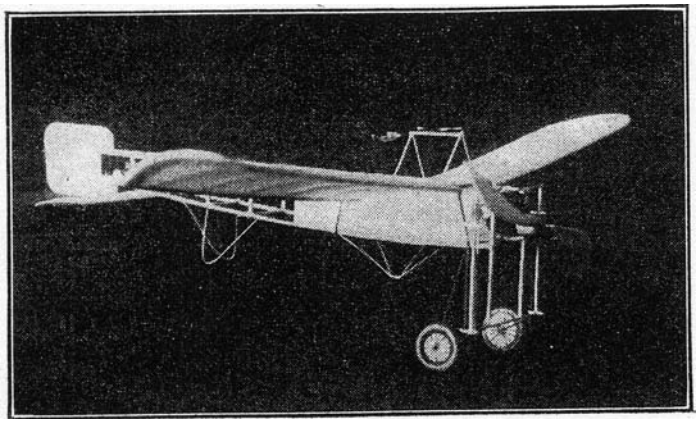
By Henry Struck

THE most famous of European aviation pioneers was Louis Bleriot, the first man to fly the English Channel in an airplane. Bleriot, born in 1872 at Cambrai, France, began his experiments at about the same time as the Wrights. By 1906 he had built four unsuccessful biplanes of his own design, in addition to an ornithopter and a Voisin biplane glider. He then built a monoplane and made his first flight, a hop of six seconds. After this machine crashed, another followed which met the same fate.

The Bleriot No. 8 proved to be his most successful design. Upon its completion in 1908, Bleriot made in it a cross country flight of 18 miles. Attempting to make the same trip again he became lost in a fog and collided with a tree, adding another to his rapidly growing list of washouts.

In 1909 the London Daily Mail offered a prize of $5,000 to the first man to fly the English Channel. Hubert Latham, of England, who had already made an endurance flight of over an hour, at once set up a shelter for his Antoinette monoplane on the French coast near Calais. The morning of July 19 saw him take off quickly under very favorable weather conditions. Everything was not destined to go so well, however, for when he had gone only about ten miles on his way his engine failed. He was rescued by a tug, which found him seated nonchalantly on his half submerged plane, smoking a cigarette.



Louis Bleriot now arrived, and it became a race between these two daring airmen. Latham rushed to Paris for another machine, and Bleriot busied him-self with tuning up monoplane No. 11. Bad weather held up Bleriot, and Latham returned before Bleriot could take off.

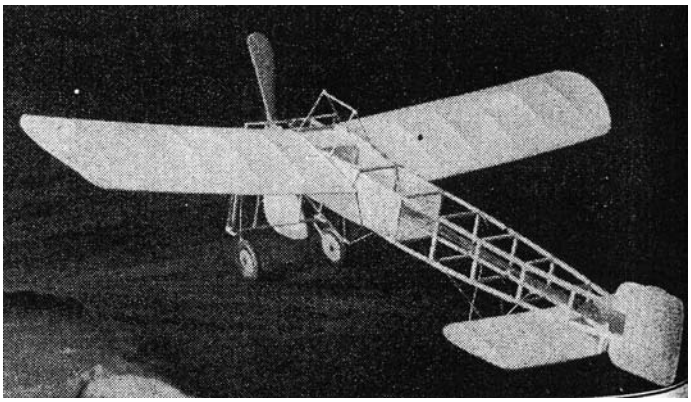
At dawn of July 25, 1909, Bleriot, though still hampered by burns suffered in a recent gasoline explosion, was determined to take advantage of what promised to be good flying weather. After making a short flight to test the operation of his motor, he announced he would start for England in ten minutes. Promptly at 4:30 a.m. Bleriot took off. Without spending any time in circling to gain altitude, he headed straight for the cliffs of Dover, as if he was unwilling to trust his engine any longer than necessary

No instrument of any kind graced the cockpit of Bleriot's plane. As he flew through the ever present fog of the Channel, any change of wind could have blown him off his course and left him hopelessly lost. Unable to gain over a hundred feet of altitude, Bleriot found when he sighted the English coast that he was low than the cliffs. Fortunately he spotted an opening in a field suitable for a landing. A gust of wind conspired with the hilly terrain to nose over his plane

when he landed, causing damage to the landing gear and propeller.

Experimenting and learning to fly his machines had cost Bleriot $100,000 and fifty crashes in nine years of tireless effort. However, he felt amply repaid for all his trouble by the acclaim of an admiring world.

Upon his return to France, Bleriot went on a tour of the principal cities of Europe. When he reached the flying field in Budapest, our own Louis Garami, even in those days an aircraft fan, witnessed Bleriot's exhibitions through a knot-hole in the fence!



The cross-Channel monoplane was of all wood construction, covered with cloth. The wing warping system, instead of the modern aileron, was used to bank the plane. The three cylinder, 26 h.p. motor which pulled No. 11 across the channel in 37 minutes was especially built for Bleriot by Anzani.

The name of Bleriot is still in the forefront of aviation after a quarter century. Many of the first line French military aircraft are manufactured by the modern Bleriot firm.

This plane is an ideal design for a good flying model. A long tail moment arm, coupled with the low center of gravity caused by the use of heavy wheels to balance the short nose, pro-vides fine stability. A large propeller and long rubber line furnish good en-durance. A study of the side view reveals an interesting fact. Note that the tail surface is set at a positive incidence angle to the thrust line, while the wing is set at a slightly greater angle. This is the principle of down, or negative, thrust we modelers use to stop stalling. And Louis Bleriot used it in 1909!

The Bleriot is shown in three-view to a scale of 1/4" to 1' or half the size of the model. The layouts are full size and offer a 1/2"-to-l' model in proportion to the others in our "Trail

Blazers of the Air" series. Use soft balsa throughout, unless otherwise specified.

FUSELAGE AND LANDING GEAR

BEGIN construction by pinning the longerons of 1/16" sq. hard balsa on the full size fuselage side view. The up-rights are 1/16" sq. soft balsa fitted in their proper positions. Both sides are made together to insure their being-alike. When the cement is dry remove from the plan and cut the sides apart carefully where the glue may have stuck them together. Cut four struts 1/16" long of 1/16" sq. Use them to join the sides at the nose and directly behind the cockpit. While drying check to see if the fuselage is square. Draw the tail end to a point and cement together. The remaining crosspieces are glued in place to complete the fuselage.

The landing gear is made entirely of 1/16" sq. bamboo strips whose length may be easily obtained by doubling the size given on the three view plan. Struts A are cemented first to the nose on the outside of the longerons. Struts B are then glued to the ends of A. The shock struts C are fitted between B struts. To build up the dummy shock springs, wind with black thread a 3/32" diameter balsa dowel 5" long and stained black with India ink. A coat of dope is applied to cement the thread to the dowel.

Make four end plates I of 1/32" balsa and cement them in their proper position on strut C, as shown on the plan. A short length of .020 wire or a pin forced through I into the top of the spring completes a realistic shock absorber unit. The axle D is bent of a single piece of .020 piano wire. Hardwood wheels 1 1/8" diameter must be slipped on before the last bend is made on each side.

A simple and neat method of reproducing the wheel spokes is with black ink. Dope the wheels lightly before inking to avoid "fuzzing" the lines. Glue the axle to the bamboo struts. When assembling the bamboo framework or attaching the wire always use at least two coats of cement to make certain of a good joint. Brace the rear of the fuselage with thin black thread.

The tail skids F are bent from bam-boo and forced slightly into the longerons before cementing. Note that when viewed from the front they form an X-shaped structure.

SURFACES

THE wing requires 12 ribs of 1/16" sheet balsa. They may be cut very easily if 12 slats of balsa are pinned together and this block carved to the rib section shown with knife and sandpaper. The slot for the spar should also be made at this time. Shape the leading and trailing edges of 1/8" sq. and 1/16" by 3/8" balsa, respectively.

Assemble the wing by pinning the trailing edges to a board. Cement the tip and center ribs to the trailing edges. The leading edges are glued to the front of the ribs. Insert the rest of the ribs, the 1/16" sheet balsa tips and the 1/16" sq. spars in this order to finish the frame. Be careful to make a right and left wing panel. The wing halves are joined at the leading edge by a strip of 1/16" sq. bamboo and at the trailing edge by an .020 piano wire saddle to fit over the fuselage, so that each tip has a dihedral of 1".

The stabilizer requires five ribs of 1/16" sheet balsa, a trailing edge 1/16" by 1/8", and a leading edge and a spar both 1/16" sq. balsa. The tips are 1/32" sheet. Assembly procedure is identical to that of the wing.

The rudder is constructed entirely of 1/16" sheet and is flat in section. The trailing edge is 1/8” wide while the braces are 1/16" sq.

Upon completion of the framework it should be sanded smooth to remove bumps that may spoil the covering.

PROPELLER AND MOTOR

ON a block of balsa 5/8" by 1" by 5 ½” trace the propeller blade pattern. Carve your prop carefully, as the success of your model depends on its efficiency. Shape the blade to an airfoil section, undercambering the back about 1/16". After sanding, dope the prop to strengthen it.

The dummy motor serves also as the thrust bearing. The crankcase is 1/2" in diameter, 3/8" long and made of balsa. Flatten off the top to accommodate the cylinders. They are 1/4" round balsa, painted black and wound with thread to simulate the cooling flanges. A pin, cut short, is forced into the top to play the part of the spark plug. Four small tri-angles of 1/16" balsa, cemented to the front of the crankcase, support at their apex the front bearing which consists of a large washer with a bushing inserted. Another similar bearing is glued to the rear of the crankcase.

Cement the completed motor to the bamboo nose frame with several coats of cement. Form a propeller shaft of .020 piano wire. After passing it through the motor and propeller, it is bent over and cemented to the hub. Do not forget two washers between prop and bearing. The rear hook, also of .020 wire, is cemented to a small block on the lower longeron as shown.

ASSEMBLY AND COVERING

WHITE tissue attached with dope is used to cover all surfaces on both sides. The fuselage is covered only at the front, where there are no thread braces. Spray the tissue lightly with water. When dry, brush on a thin coat of dope.

Attach the lower cabane struts E to the fuselage. The upper struts G are forced into the center ribs. True lengths of these struts are indicated on the fuselage layout. Two small 1/16" sq. balsa struts give the stabilizer the proper incidence of 3/16". The rudder is cemented to the rear of the fuselage. A thin rubber band fastens the wing to the body. Check its incidence of 3/8".

FLYING

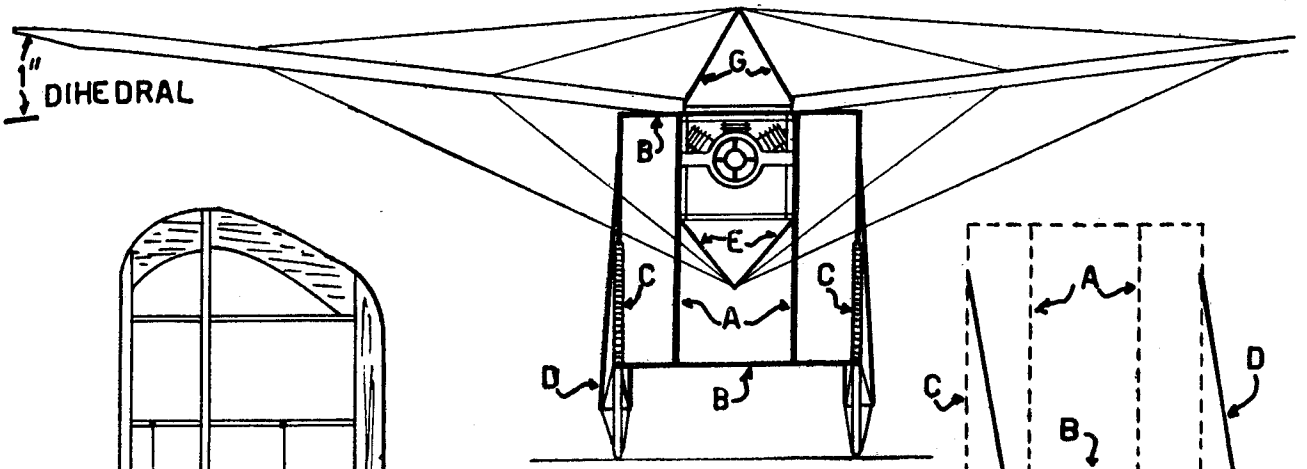
FOUR strands of 3/32" brown rubber are ample power. Glide the model, shifting the wing slightly back to correct a stall or forward for too steep a descent. The rudder may be turned slightly, so a right circle is made. Give the motor 100 turns for the first hop. When wound with a winder using lubricated rubber, over 500 turns are possible—enough to send your Bleriot high into the sky.

The wing brace wires are not needed for the flying model, but their location for exhibition purposes is shown by small dots on the wing.

In order to get the best performance out of any model you build, remember to keep its weight as close to that given by the designer as possible. On a small model a slight increase in wing loading has a pronounced and unwelcome effect.

For our next model we will return to the United States to reconstruct the famous Curtiss pusher.

BLERIOT'S CHANNEL CONQUEROR—Plate 1



FRONT

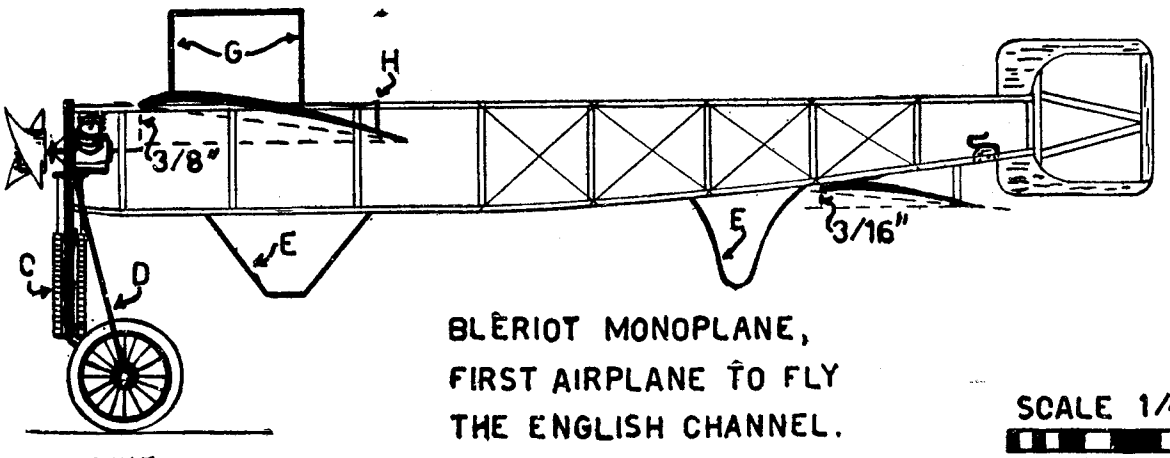
LANDING GEAR
"D" ONE PIECE
.020 WIRE

BLERIOT
SPAN– 28'
LENGTH– 25'
ENGINE – ANZANI
25 H.P.

TOP

COLOR
WHITE– ALL SURFACES
BLACK– MOTOR,
STRUTS,
BRACE WIRES
(THREAD)

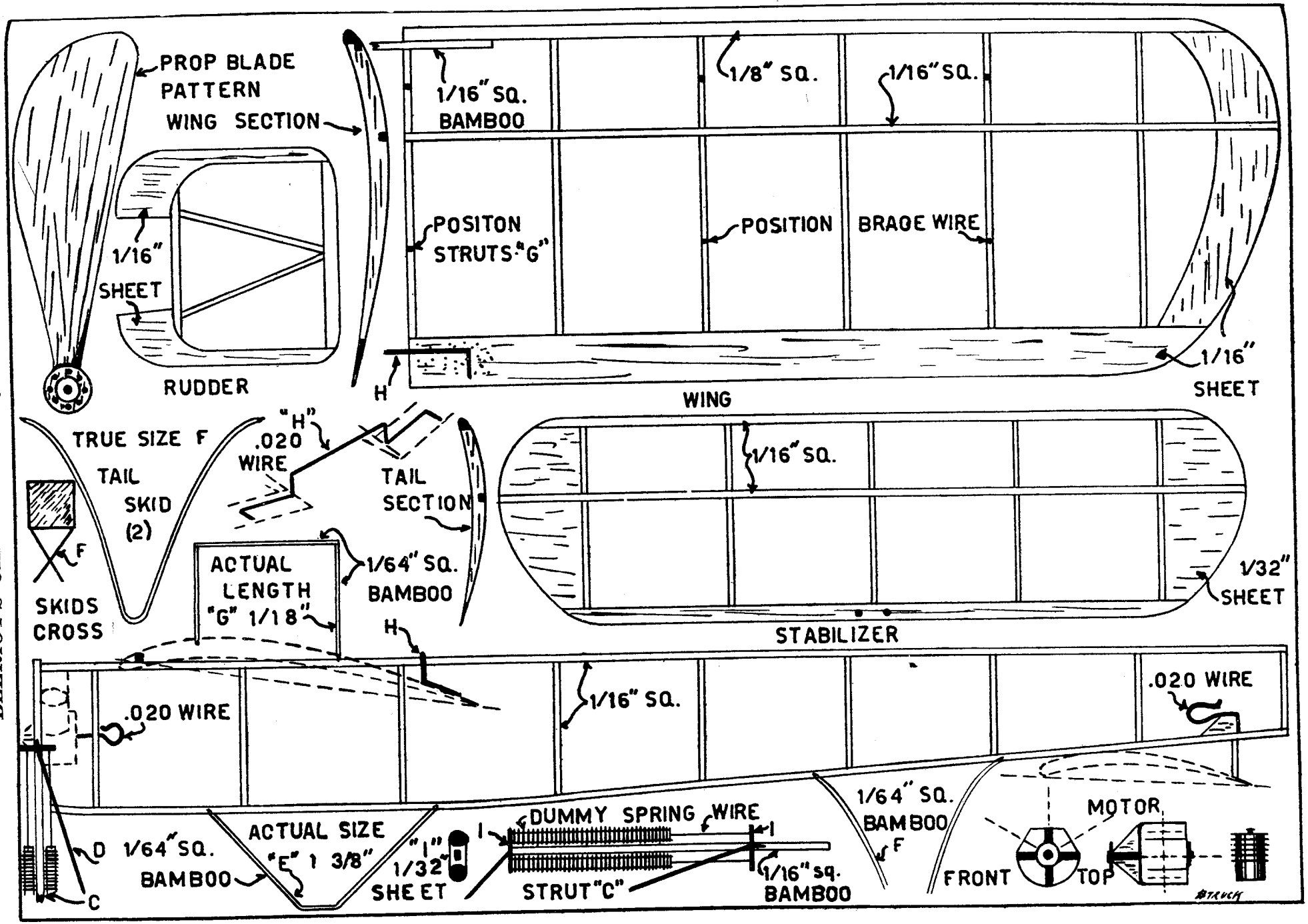
WEIGHT
READY TO
FLY– .45 OZ.



SIDE

BLÈRIOT MONOPLANE,
FIRST AIRPLANE TO FLY
THE ENGLISH CHANNEL.
JULY 25, 1909

SCALE 1/4"=1'


PROP BLADE PATTERN
WING SECTION
1/16" SQ. BAMBOO
1/8" SQ.
1/16" SQ.
POSITON STRUTS "G"
POSITION
BRAGE WIRE
1/16" SHEET
RUDDER
1/16" SHEET
H
WING
TRUE SIZE F
TAIL SKID (2)
"H" .020 WIRE
TAIL SECTION
1/16" SQ.
1/32" SHEET
F
SKIDS CROSS
ACTUAL LENGTH "G" 1/18"
1/64" SQ. BAMBOO
H
STABILIZER
.020 WIRE
1/16" SQ.
.020 WIRE
D 1/64" SQ. BAMBOO
C
ACTUAL SIZE "E" 1 3/8"
"I" 1/32" SHEET
I
DUMMY SPRING WIRE
STRUT "C"
1/16" sq. BAMBOO
1/64" SQ. BAMBOO
F
MOTOR
FRONT
TOP