

<b>J.A. "BULLDOZER"</b>	
CLASS	A & B
WINGSPAN	46.5 IN.
LENGTH	30.75 IN.
PROJECTED AREA	330 SQ. IN.
WEIGHT	23.5 OZ.
SCALE	1/4" = 1"
DESIGNED BY JERRY STOLOFF	

by Cpl. JERRY STOLOFF



THE *Bulldozer* was primarily designed for beginners in the gas model field. Most novices are easily discouraged because the ship they choose to start building gas models is usually one that requires an expert craftsman. The *Bulldozer's* simple but sturdy construction can really absorb punishment, while its boxlike construction offers the maximum in simplicity and strength.

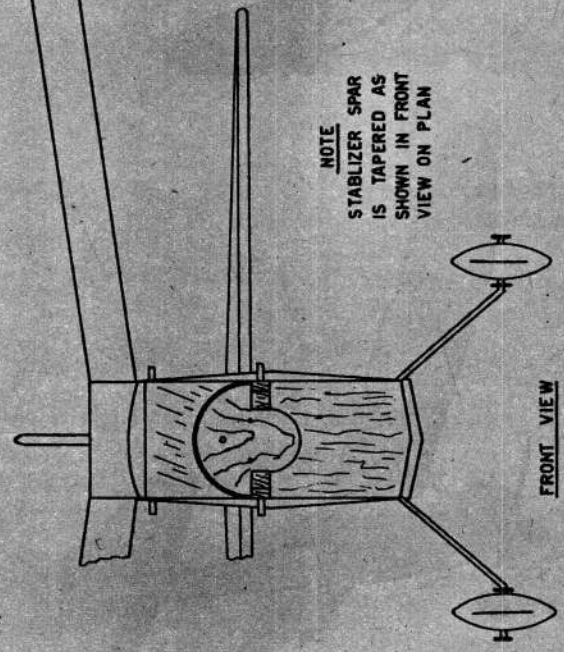
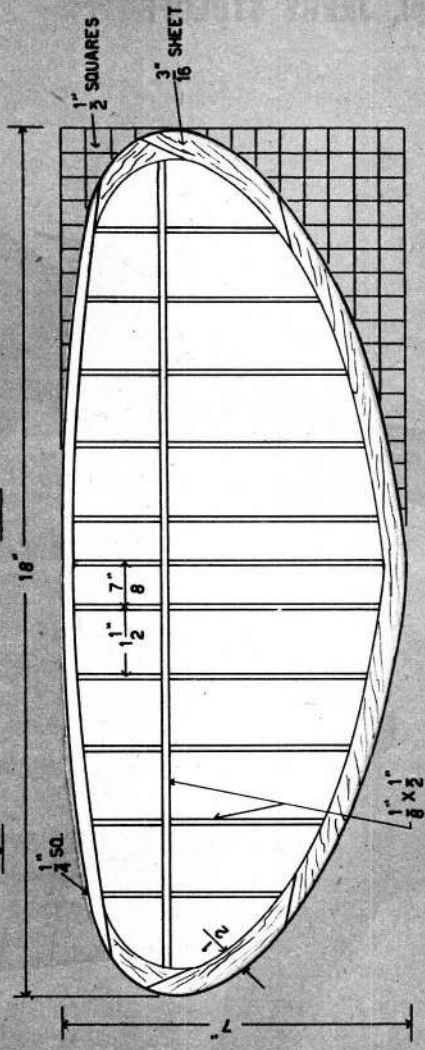
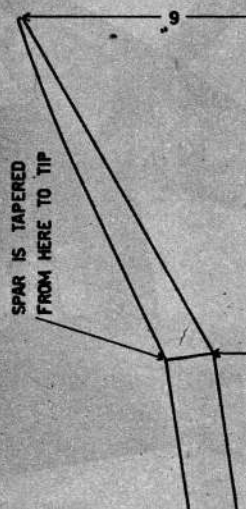
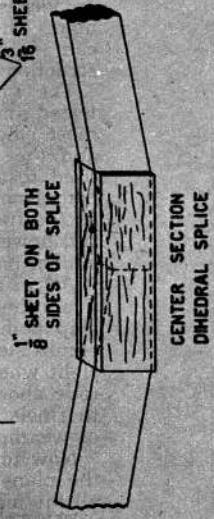
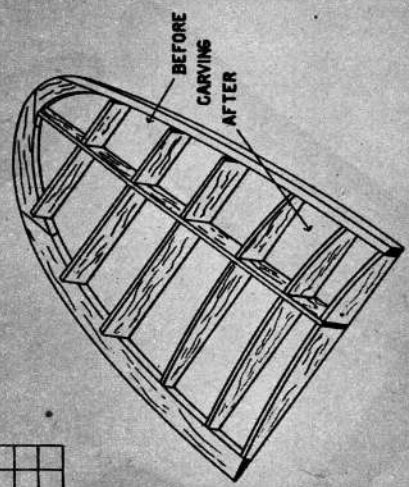
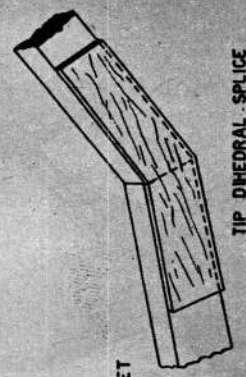
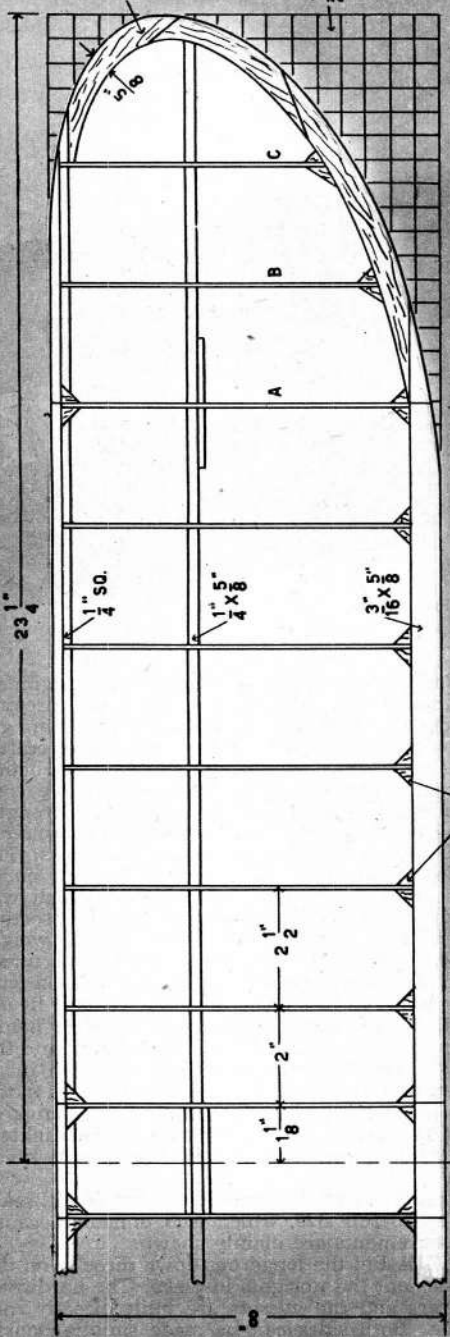
The wing uses an airfoil which has been thoroughly tested and used in many of my previous designs. The most efficient type of dihedral is a continuous curve and the nearest thing to it is polyhedral which was used to advantage in the *Bulldozer*. The tail section consists of a lifting stabilizer which helps lift the weight of the fuselage and also helps to prevent loops under full power. The wing and tail section are held on with rubber bands and in case of a crackup will simply fly off.

All in all the *Bulldozer* really lives up to its name. From the moment the wheels leave the ground and the ship points its nose skyward, nothing can stop it. It climbs steeply to the left under power and glides to the right when the engine cuts. The glide is something to rave about because it takes advantage of the slightest thermals. Also, it performs equally well in all kinds of weather.

Now to begin actual construction. First of all, scale the plans up to full size, which isn't difficult because all the measurements are plainly shown.

**FUSELAGE**—Pin the longerons down directly on the plans and cement the uprights in place. The hardwood motor bearers and the gussets are built directly into the fuselage. Both sides can be made simultaneously and then split apart when dry; you will find this procedure saves time and assures absolute uniformity. In putting the fuselage together it is best to cement the rear first, then glue on the spacers at the cabin and

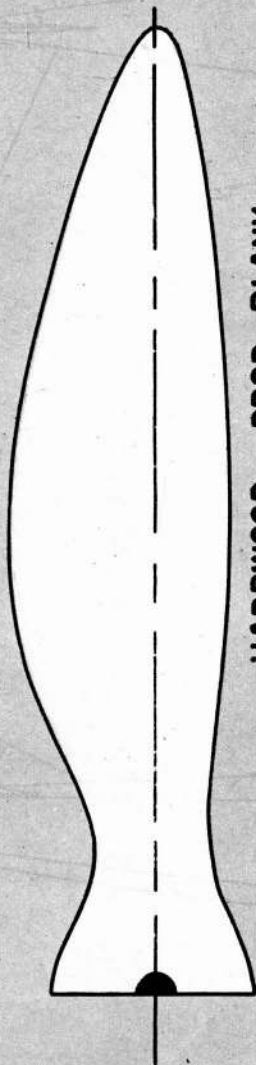
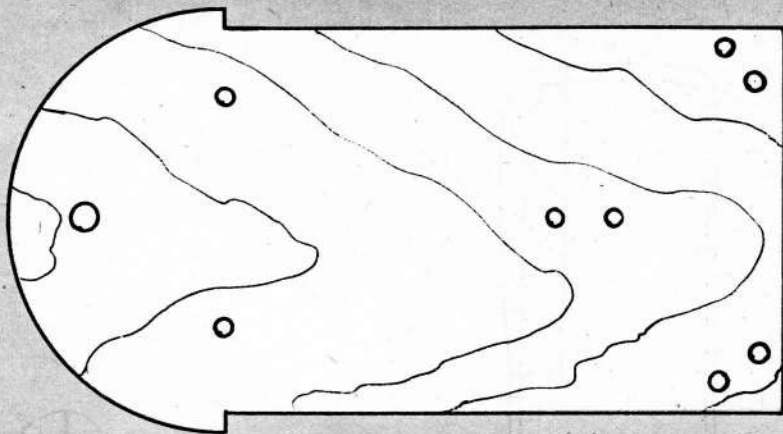
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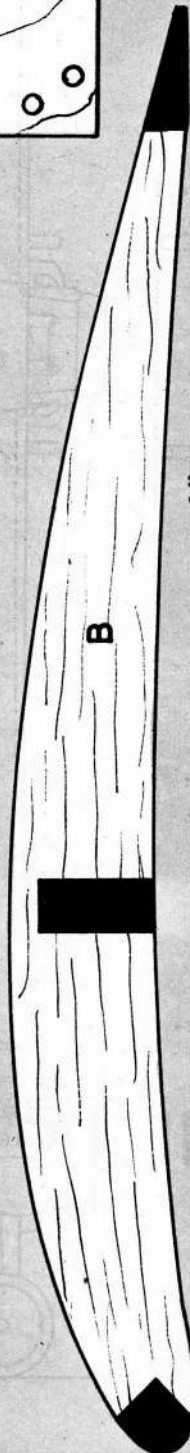
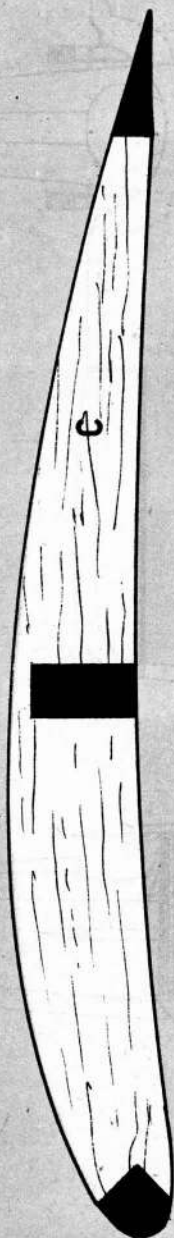
NOTE  
STABILIZER SPAR  
IS TAPERED AS  
SHOWN IN FRONT  
VIEW ON PLAN

"BULLDOZER"

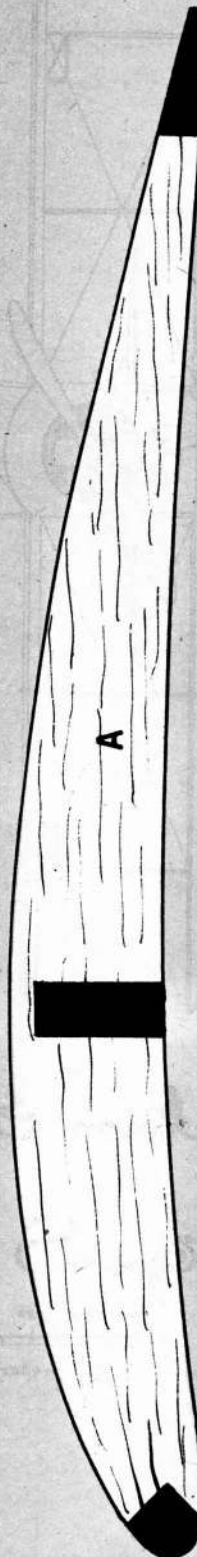
FIREWALL  $\frac{1}{8}$ " PLYWOOD



HARDWOOD PROP BLANK



ALL RIBS CUT FROM  $\frac{1}{16}$ " SHEET



FULL SIZE

"BULLDOZER"

J.S.



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years after his death, Gerard F. Vultee's name is an integral part of a giant American aviation enterprise which has procured every possible type of military airplane and has just announced the largest airplane ever constructed in the history of aviation! More than 101,000 people have been at work in this tremendous manufacturing project and planes of every description are now flying and fighting with Jerry Vultee's name. That's the way he always dreamed of it and, perhaps, right now he's flashing that tight, slightly drawn grin of his, feeling just a glow of pride and musing about that's the way he wanted it and that's just how it is!

**VICTORY**

**Bulldozer**

(Continued from page 17)

the remainder of the spacers. The firewall, of 1/8" plywood, is cut out and holes drilled in for the ignition wires and also for the landing gear. The landing gear is bent to shape of 3/32" steel wire, bound to the firewall with heavy thread and cemented thoroughly. It is then cemented to the fuselage. Cement the stringers of 3/32" x 3/16" in their proper place along the four sides of the body, fairing them in at the cabin and also the rear of the fuselage.

The nose block is constructed in three pieces, using 3/16" sheet for the sides and a block cut to shape and hollowed out for the middle section. It is cemented to the fuselage and when dry carved and sanded to the desired round shape. The top cowl, of 1/16" soft sheet, is soaked in boiling water so it may easily be bent to shape over the firewall. It is best to coat the inside with cement to hold the desired curve. When dry, the opening can be cut in it for the motor to protrude. A scrap piece of balsa is carved and sanded to a slight curve to allow the celluloid windshield to be bent around it. All the joints are glued thoroughly once more, and when dry the entire body is given a good sanding, removing all excess glue and bumps.

**WING**—The wing ribs are cut out of 1/16" sheet and notched so the spar fits in snugly. They should be pinned together and sanded to assure exact duplication. The wing tips are cut from 3/16" sheet, cemented together and tapered. The trailing edge of the wing should be fairly hard; it is tapered and pinned down on the plans. The ribs are pinned down and cemented to it after which the leading edge is glued to them. The gussets of 3/16" sheet are cemented to all rib corners except where the wing is cracked for the dihedral. The wing tips are then cemented in place. Both halves of the wing are constructed in the same manner. Blocks are used to put proper dihedral into the wing. When dry, insert the spar and cement, being sure to taper the tip. The gussets at the dihedral brakes are added and reinforcements are cut out and cemented to sides of the spar. The entire wing is given another coat of cement at all the joints. When dry, sand the entire wing, rounding off the leading edge and making sure the trailing edge flows into the ribs with no edges left for the cover to catch on.

**RUDDER AND STABILIZER**—The rudder outline of 3/16" sheet is cut to shape, cemented together and pinned to the plans. The ribs of 3/16" square are cemented in place. When dry, sand the rudder to a streamline section. The stabilizer outlines are cut to 3/16" sheet (Turn to page 70)

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and pinned down on the plans. The spar is tapered and pinned in place as is the leading edge. The ribs are cut to length and glued in place. The whole stabilizer is then glued a second time, and when dry carved and sanded to an airfoil section as shown.

**IGNITION**—Since the correct wiring hookup can determine whether or not the engine will receive the proper spark, special care should be taken to see that all connections are properly soldered. The plans show approximate position of the flight timer and coil. In determining the proper position, the engine and tail section should be attached to the fuselage so proper balance can be obtained. The model should balance 3" from front of the cabin. The battery box is placed inside the fuselage just below top of the cabin. Terminals of the battery box should be constructed of brass sheet which is a good conductor. After the right position for the timer is obtained that section should be filled in with 1/8" sheet and the timer inserted. The coil is bound to a piece of 1/4" x 1/2" and cemented to bottom of the fuselage. Be sure to include booster connections in order to facilitate starting. After all connections are soldered, test the hookup in the following manner: Insert the batteries, pull out the timer, and touch the ground and timer point wires together holding the high tension wire about 1/4" away. If the hookup is correct and the batteries good, the spark should jump to the high tension wire. Next, with the ignition timer off, plug the boosters in and follow the same procedure.

**COVERING AND FINISHING**—The entire ship may be covered with either silkspan or plain silk. If silkspan is used be sure to cover with the grain running lengthwise on the fuselage and wing. Cover the stabilizer with grain running chordwise so as to help prevent warps when doped. In covering the fuselage, the covering should only be applied to the longerons. The wing covering should be cemented to every rib on the wing underside in order that the correct airfoil be obtained. On the top half, the covering is just cemented to the leading and trailing edges. In covering the top part of the stabilizer, it is best to dampen the covering so it may be stretched over the curved section without wrinkling. After the rudder is covered, spray all parts with water and allow to dry.

The doping operation comes next. In doping, remember the main purpose is to fill in the pores of the paper and make it airtight. Therefore the number of coats required depends upon covering and type of dope used. After all parts are sufficiently doped, a design with color dope may be applied in order to dress up the model. The celluloid windshield is cut out of fairly heavy stock and cemented to the cabin. A thin cardboard pattern can be first made and fitted, then traced onto the celluloid. Holes are drilled in the fuselage so the 1/8" dowel can be inserted for holding the wing and tail section to the fuselage with rubber. The wheels are fastened to the axle by means of a washer soldered on either side. Motor mounts of proper size, depending on width of motor used, are cut to length and bolted to the motor bearers after which the motor is fastened to them.

**TEST FLYING**—if the ship is properly constructed and balanced it should fly right off the drawing board. Select a calm day and a large field so that utmost care is taken for the test flight. By running into the wind with the model held at shoulder height it can be released at proper flying speed for the glide. By glid-

ing the model a few times with this method you can observe whether its actions are correct. If the model tends to dive, place a piece of 1/32" sheet under the trailing edge of the stabilizer. Pieces of this thickness should be inserted until a smooth glide is obtained. If the model tends to stall, place the pieces under the leading edge of the stabilizer in order to give it positive incidence.

After the model has obtained a long, smooth glide it is ready for its first power flight. With the rudder at neutral and the motor at 1/3 throttle, hand launch the model into the wind. Use about a 20 second motor run to enable the model to attain enough altitude for it to recover from a stall. After noticing which way the model flies under power, left thrust may be put into the motor enabling it to turn left. The rudder is offset for a right hand turn and the model is given another test flight with the same power and motor run. After enough confidence is built up and the plane performs satisfactorily at 1/3 throttle, the power can be increased slowly with each flight. At full power, the model may have a tendency to loop. In this case, apply a little down thrust by simply loosening the bolts that connect the motor bearers and motor mounts. The motor is bent down slightly and the bolts tightened up.

Enough cannot be said about test flying a new model. Use extreme care and have patience and I am sure you will be well rewarded with an outstanding performance. It would be advisable to have your name and address written on the ship so that it may be returned to you after one of its cloud-hopping flights.

### Flash News

(Continued from page 12)

who has flown 450 combat hours without a scratch was driving to Paris to make a radio broadcast. He is credited with an additional 13 e.a. on the ground and (of course) one vehicle: his own!

A.A.F. BOMBER CREWS are now served hot meals while on long missions, according to the Air Technical Service Command! The meals are carried in a compact heating unit operated from the bomber's 24-volt system and contains chicken, soup, mashed potatoes, buttered peas, cranberry sauce and hot biscuits! The purpose of this "light snack" is to hold them until they return for a thick steak, AAF practice following long missions!

THE "HOTTEST" fighter unit now in action is the 357th *Mustang* Group of the 8th A.F. in England. They have just completed a year's active duty and totalled a score of 587½ e.a. destroyed. The 56th *Thunderbolt* Group still holds the record at 850 e.a., although this score was rung up over a period of two years.

LATEST JAPANESE fighter planes are the *Frank I*, 400 mph fighter powered by a 2,000 hp radial engine, and the *Jack II*, powered by two 1,870 hp engines. The *Tojo II* can dive with the best of our fighters and resembles our Republic *Thunderbolt*. Japanese armament has improved with both the 7.7 mm and 20 mm weapons having increased muzzle velocity. *Myrt II*, a fast reconnaissance plane, is powered by an engine equipped with water injection. First combat four-engined Jap plane is the *Liz*, a large but slow Navy transport-bomber.

MAJ. GEN. Ralph Royce has been named Commanding General of the AAF Personnel Distribution Command, it is announced. The Command, long centered at Atlantic City, is being transferred to Louisville, Ky.



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