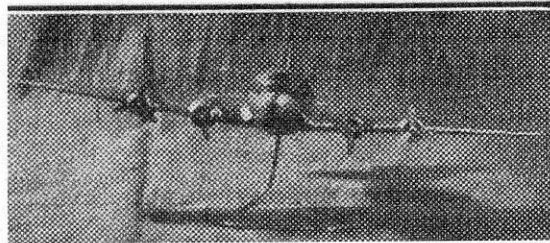


MAKE THE BOEING

Sub-Stratosphere Ship

By Nick Limber

Among the great planes of sky-history-to-come will be the Boeing 307, a twenty-one ton transport designed to hurtle through the rare upper air. The first of these huge craft is now under construction in the Boeing shops at Seattle. But from the manufacturer's own plans on file in the U.S. Patent Office, our alert Nick Limber has developed this swell solid model.



Since our model of this Boeing high flyer is built with its landing gear retracted, it "hasn't got a leg to stand on." So a simple wire base, such as that shown here, will be found an effective means of mounting your miniature ship for display.

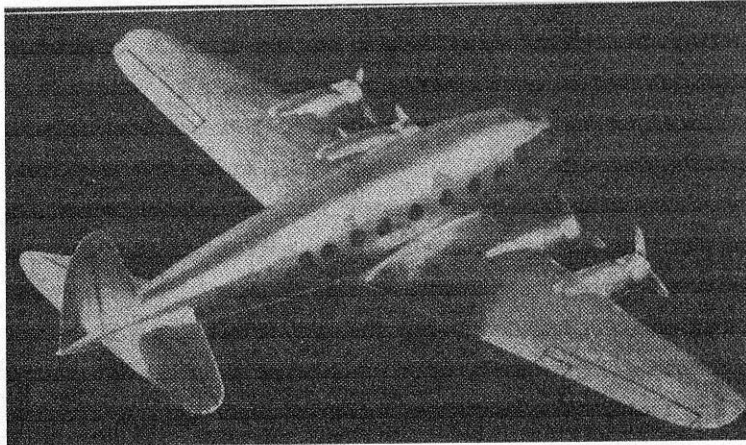
Designed to carry thirty-two passengers and a crew of four through the rarefied regions that form the upper limits of our troposphere, the new Boeing 307—now under development in the Boeing company's shops at Seattle— could never be classed as "just another airliner." For the eventual completion and placing into service of this great ship will be man's first major step toward the commercial conquest of the upper air—and, perhaps toward the conquest of space itself!

While but little information has been released concerning the expected performance of the ship, certain design specifications have been made available and will be found on the accompanying Plate 2. The ship itself, the engineers say, will be fitted with an absolutely airtight cabin in which a constant pressure will be maintained regardless of the air pressure outside.

Powered by four huge Wright G.100 Cyclone engines, the 307 will have a total rating of 4,400 h.p. at take-off.

And now let's examine the drawings and prepare to build our solid model of this distinctive ship. The data for these drawings, incidentally, were taken from plans filed with the U.S. Patent

Office, when application was made for patents on the ship's design.



Common aluminium paint - applied several times between smooth sandings—produced this nifty finish on Nick Limber's model of the Boeing 307. The additional details were added with India ink and black paper. Spiffy as it is, this is really an easy model to make.

On the next two pages you'll find a side-elevation of the ship. To construct the fuselage, trace this outline onto a balsa block measuring $9\frac{1}{2}$ " by $1\frac{1}{2}$ " by $1\frac{1}{2}$ ". Cut away the excess balsa, then trace the top view from Plate 2 onto one of the sides, and trim away the surplus wood here, too. Work carefully throughout, for your $1\frac{1}{2}$ " square doesn't leave much room for waste.

Now shape the body, and pay close attention to the various cross-sections while you work. You need a sharp knife and sandpaper for this part of the job. For the final smoothing, use—No. 00 sandpaper. And now your 307's fuselage is shaped, you're ready to build the

TAIL ASSEMBLY AND WING

Both the rudder and stabiliser are carved from $\frac{1}{8}$ " sheet balsa. Trace the outlines from the diagrams onto the stock, and after cutting away the excess, use sandpaper to work out final streamline shape. Cement the tail to the fuselage, making certain that the rudder is perfectly vertical and the stabiliser perfectly horizontal.

Make the wing in two pieces, each measuring $6\frac{1}{8}$ " by $2\frac{3}{4}$ " by $7\frac{1}{16}$ ".

After roughly tapering each piece in accordance with the top and front views, refer to the sectional diagrams and shape the

airfoil section. With a knife, cut away the surplus balsa, and then use sandpaper to obtain the desired airfoil.

When both panels have been completed, make the four engine nacelles. These are shaped from soft balsa and are constructed in the same general manner as the fuselage. The outer nacelles are carved from balsa blocks 5/8" sq. by 2", while the inner ones are shaped from blocks 5/8" sq. by 2½". The nacelles and cowls are easily cut in one piece. After the nacelles have been shaped, cut out the slots to fit them to the wings. These slots are shown in sections GG and HH on Plate 1.

Smooth out the slots with sandpaper, then cement the nacelles to the wing halves. Let them dry, and cement the wings to the fuselage as shown in the front view. Be sure that the same amount of dihedral is given on both sides.

After the cement has hardened, fillet the wing to the fuselage with plastic wood.

Such details as the retracted landing gear and tail wheel are made from scrap and cemented to the model. We might mention here that because of the necessary secrecy surrounding the construction of the original Boeing 307, no details on the extended landing gear are available. So in order to keep the model as true to scale as possible, we followed the Patent Office plans and used the retracted landing gear.

COLOURING THE MODEL

Silver is the chief colour of our 307 since the original ship will be of all-metal construction. The landing gear and the front of each engine cowling should be painted black.

When painting the model, sandpaper it smooth after each coat. The first coats must be thin. When the finish finally suits you, cut the windows of the ship from black paper and cement them to the fuselage as shown in the drawings. Use only mucilage to hold the windows to the body, for if cement is used it will spoil the silver finish.

Now pin the propellers to the nacelles. Ready made metal props are best for the model's appearance, but if you cannot conveniently get them you can make your own of cardboard or wood. Paint them silver.

Indicate all control surfaces with a thinly drawn India ink line. Rule these lines carefully, using a straight-edged guide and a regular ruling pen if possible. India ink is also used for the Boeing trade mark on the rudder.

Boeing Sub-Stratosphere Ship

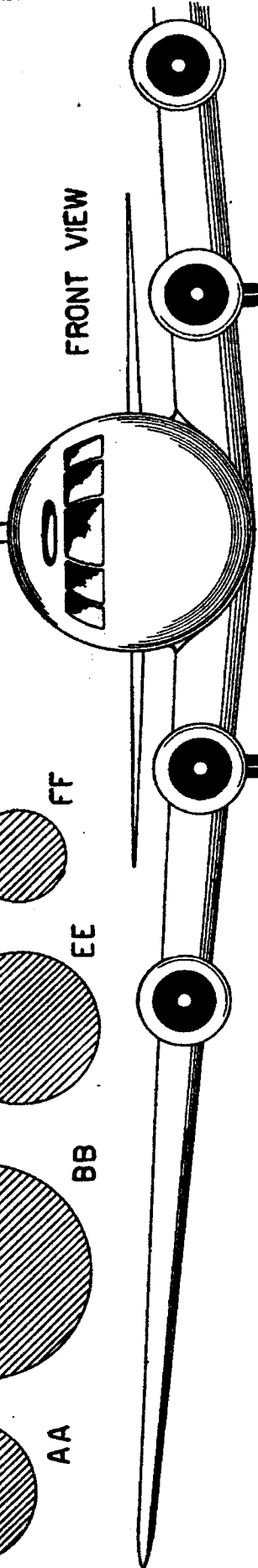
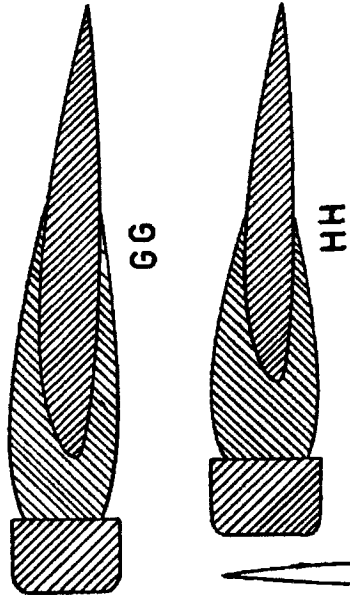
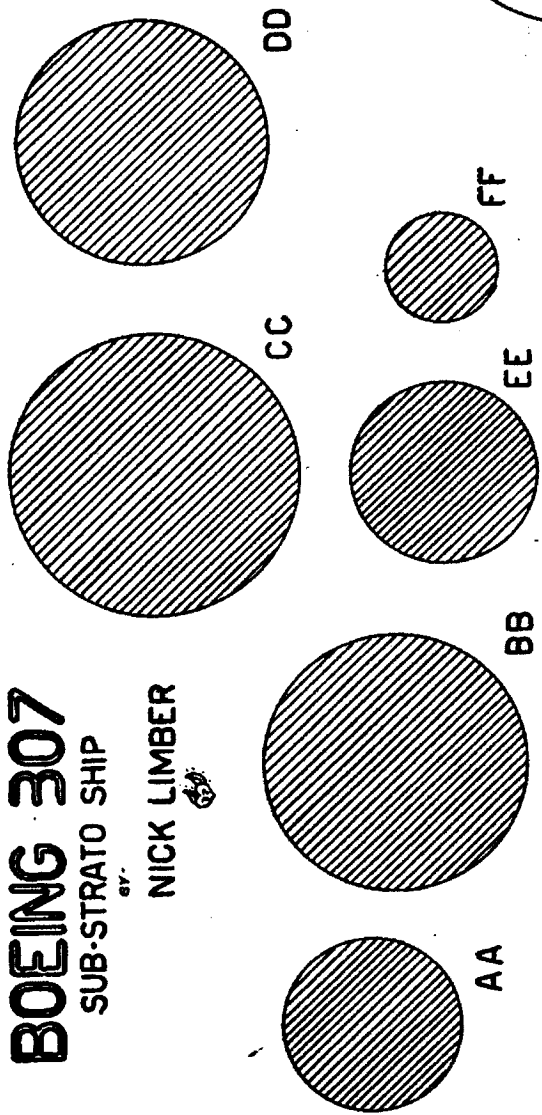
Since the landing gear is retracted on our model, a wire stand, as shown in the small photo, will add to the appearance of the ship.

The stand used for our original Boeing 307 was made from an ordinary wire coat-hanger. To make a similar one, bend the wire into a triangle and turn up one end, then insert it into the bottom of the fuselage. The best place is about the centre of the wing. The wire may or may not be cemented.

BOEING 307

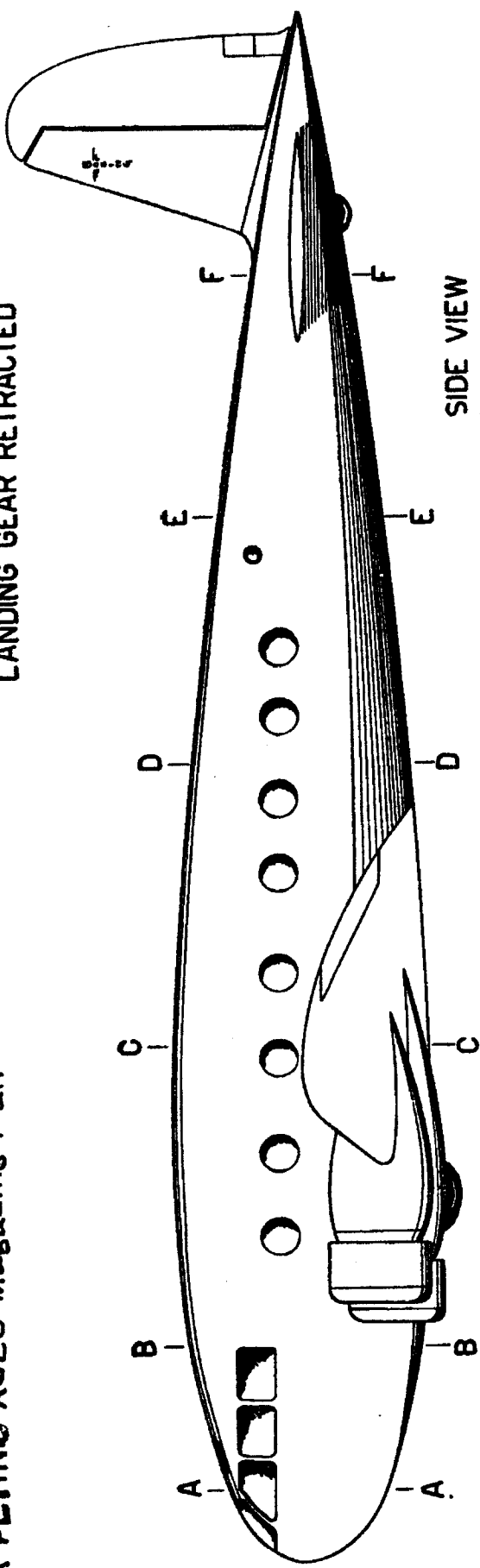
SUB-STRATO SHIP

BY NICK LIMBER

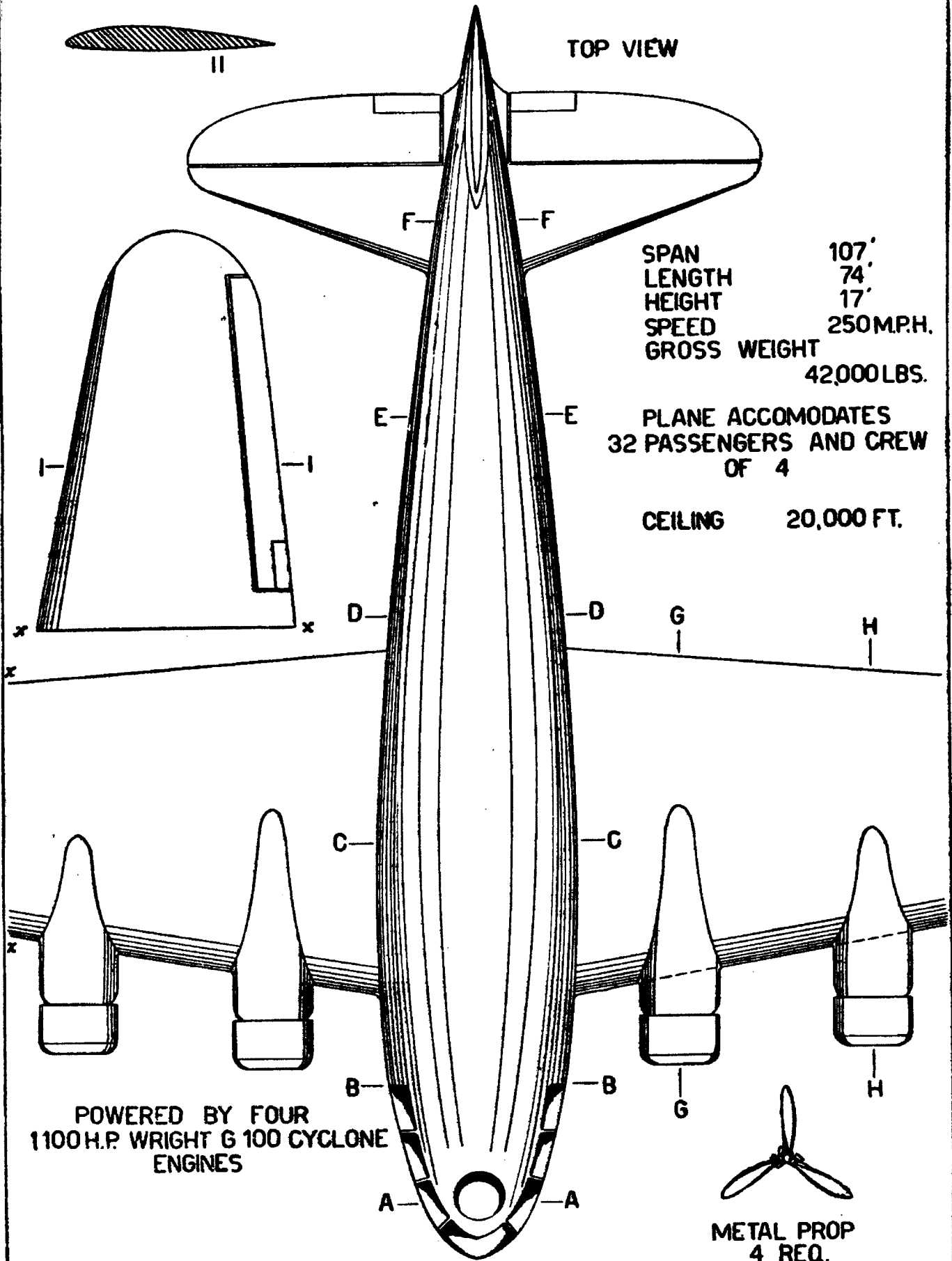


LANDING GEAR RETRACTED

A FLYING ACES Magazine Plan



MAKE THE BOEING SUB-STRATOSPHERE SHIP Plate—2



TOP VIEW

SPAN 107'
 LENGTH 74'
 HEIGHT 17'
 SPEED 250 M.P.H.
 GROSS WEIGHT 42,000 LBS.

PLANE ACCOMODATES
 32 PASSENGERS AND CREW
 OF 4

CEILING 20,000 FT.

POWERED BY FOUR
 1100 H.P. WRIGHT G 100 CYCLONE
 ENGINES

METAL PROP
 4 REQ.