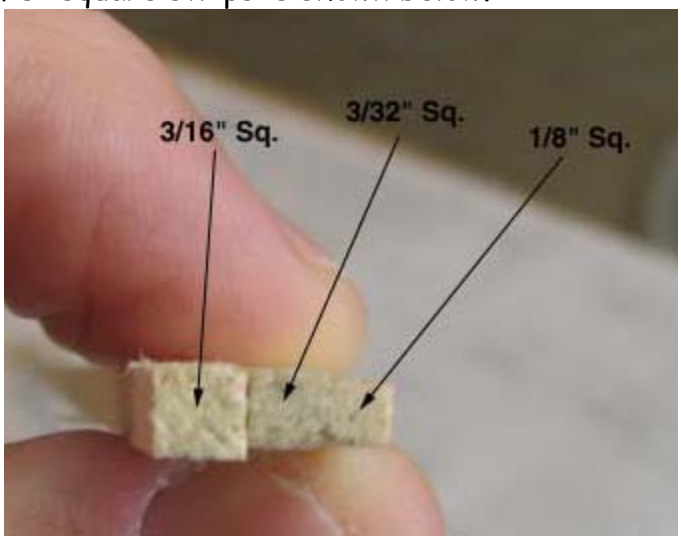
David Harding

From: Tandy C. Walker [tandyw@flash.net]
Sent: Thursday, October 29, 2009 2:10 PM
To: Undisclosed-Recipient: ;@smtp104.sbc.mail.mud.yahoo.com
Subject: 3 Speed 400 Cloudster - Test for Changing Wood Size

On Tuesday I received a one line e-mail from Jack Hiner that said:
"Tandy, 1/8 inch square spruce or hard balsa will work for longerons on a model this size.....Jack
After I received his message, I picked out some 1/8" square hard balsa strips to make new Cloudster sides with. However, about 15 years ago Dick Huang and I went over to MAL's hobby shop in Irving, Texas and had Edcor Sea cut us a hundred 5/32" square balsa strips each and I still have a supply. A size comparison between 3/16", 5/32", and 1/8" square strips is shown below.

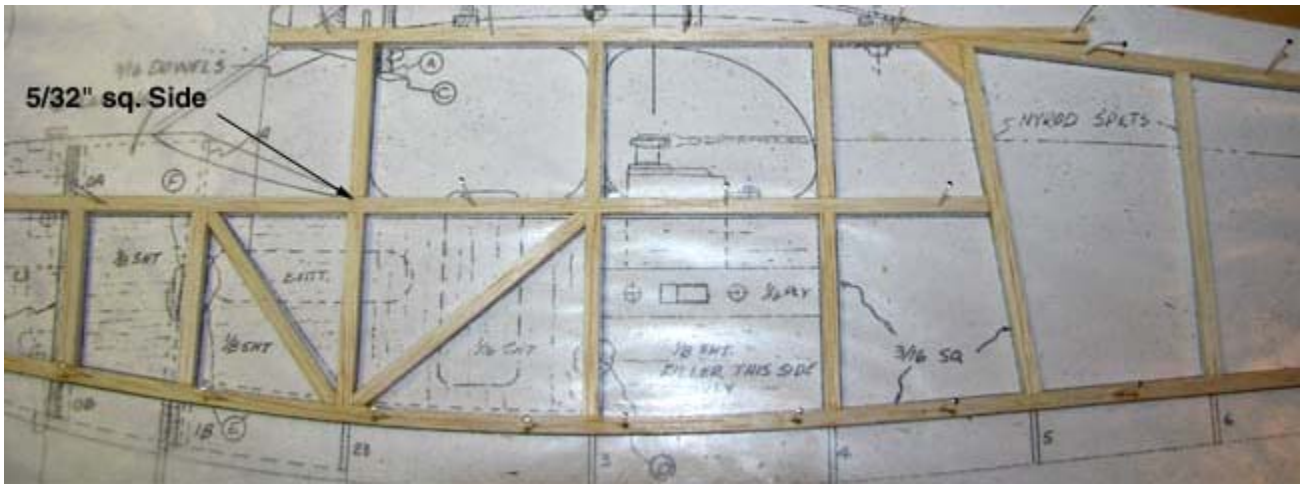


As it turns out the 1/8" square hard balsa strips weigh about the same as the 5/32" square medium balsa strips, but the 5/32" square strips have a little more mass to them. Several years ago I built up the cabin Playboy fuselage frame shown below out of a set of the 5/32" square medium balsa strips. This structure is about the size of the Cloudster and it weighs 21 grams or about 3/4 of an ounce.

After some discussion with Jack Hiner, collectively we decided that since the

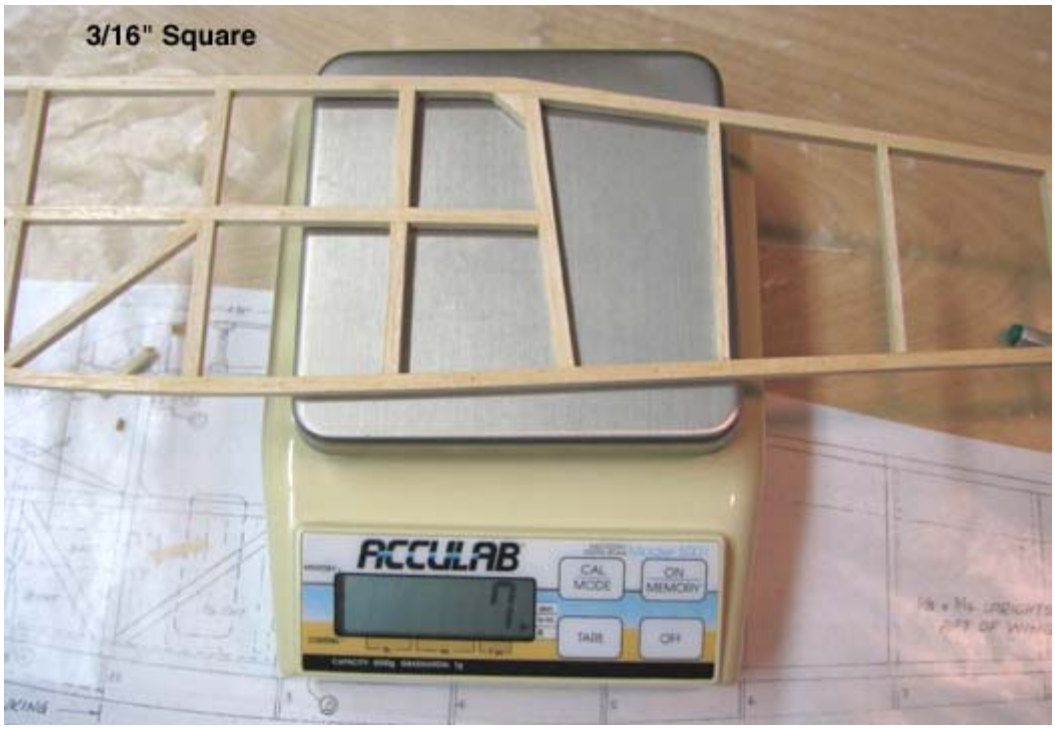
Cloudster does not have a real long tail like the Baby Playboy and does have short nose, the 5/32 is better choice. Besides, the 5/32 square will give more joint gluing area.

So last evening I laid up the first Cloudster fuselage side using 5/32" square balsa strips as shown below.

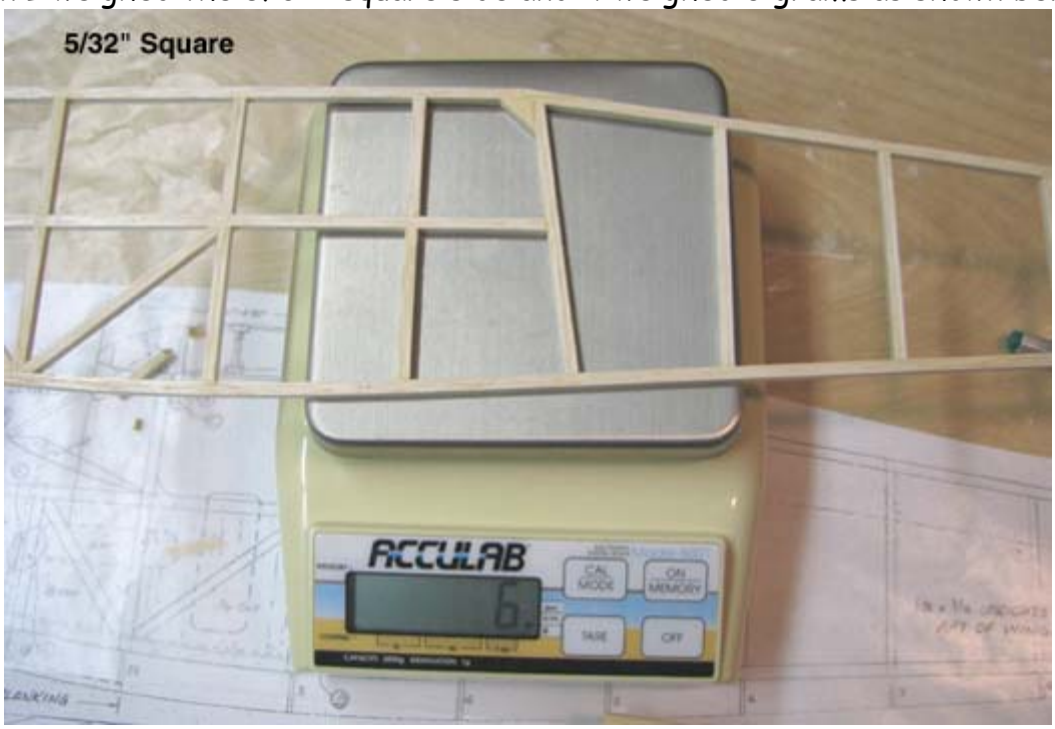


In the picture below, the 3/16" square two sides are at the top of the picture and the 5/32" square side is at the bottom.

I weighed the 3/16" square side on the AccuLab scale and it weighed 7 grams as shown below.



Then I weighed the 5/32" square side and it weighed 6 grams as shown below.



I was very surprised to find that there was only one-gram weight savings by using the smaller 5/32" square balsa strips! I guess part of the reason there is so little difference is the reduction from 3/16" square down to 1/8" X 3/16" for the vertical members in the aft portion of the fuselage. Considering the framing of both sides and the cross member on top and bottom, 5/32" square balsa strips will save less than 4 grams all total.

I have wasted some time and materials going through this exercise, but at least now I know. Therefore, I am going to proceed with the Cloudster construction using the two sides I have already built out of 3/16" square strips.....Tandy