

David Harding

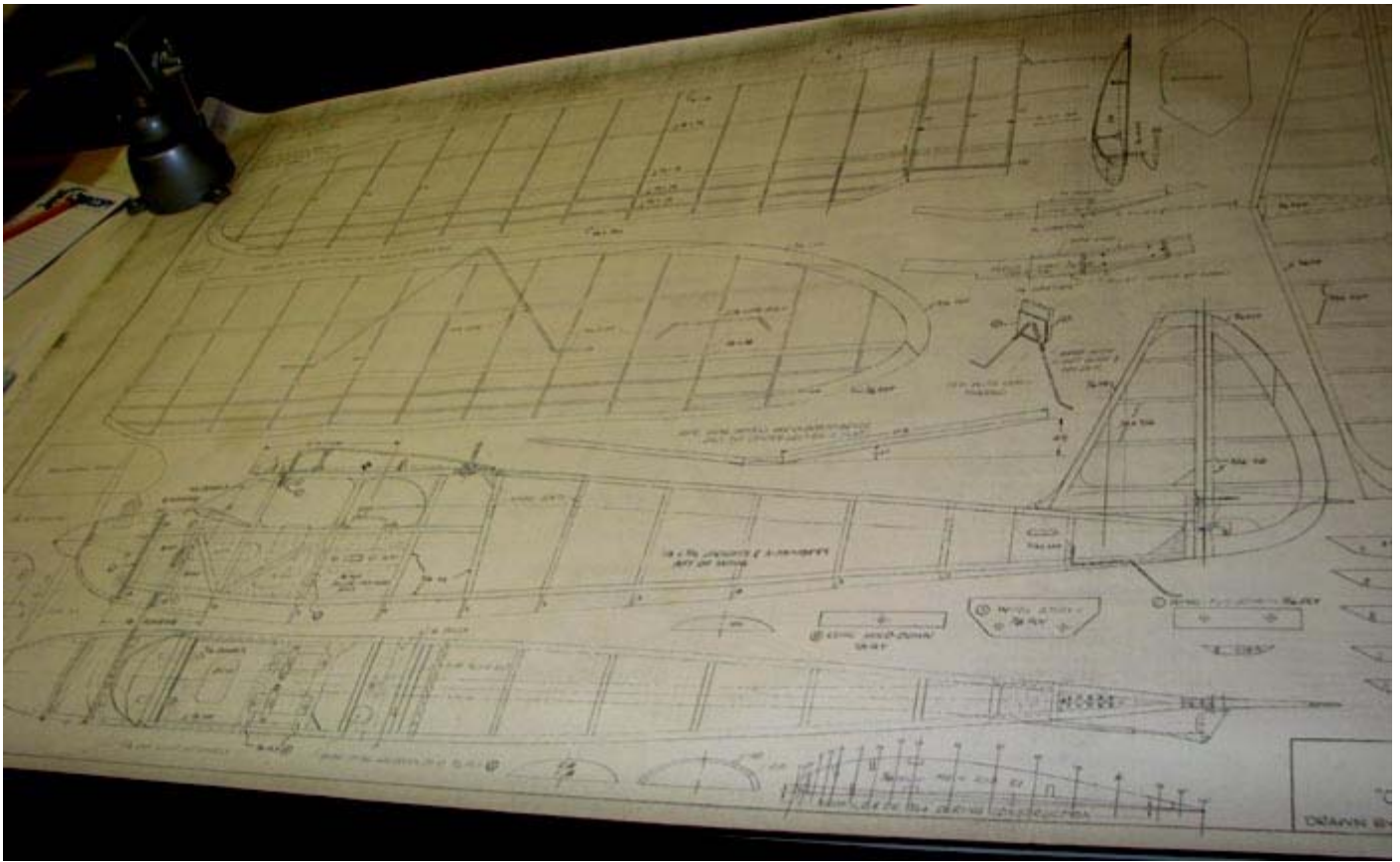
From: Tandy C. Walker [tandyw@flash.net]
Sent: Tuesday, October 27, 2009 11:29 AM
To: Undisclosed-Recipient: ;@smtp105.sbc.mail.mud.yahoo.com
Subject: 1 Speed 400 Cloudster - New Model Selection

Speed 400 Cloudster Project

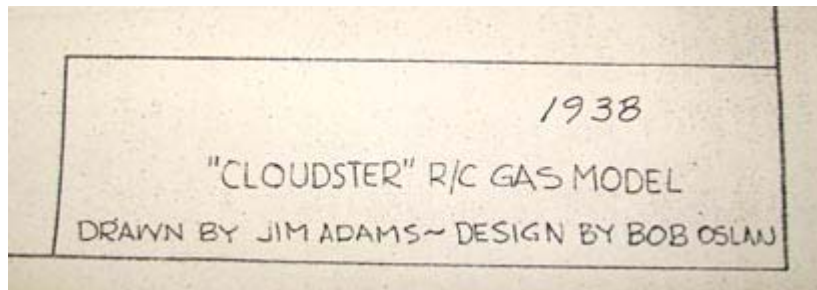
This first report intentionally contains the necessary documentation to justify the selection of the Jim Adams Cloudster plan for the SAM Speed 400 electric event.

After scaling the Baby Playboy plans and modifying the front end, fortunately Ned Nevels pointed out that it was against the Speed 400 rules to use the rubber version of the Baby Playboy plan. So I decided to discontinue the Baby Playboy project for my Speed 400 electric model.

I spent most of last week searching for another model suitable for the Speed 400 event. While going through my collection of plans, I ran across a set of hand drawn Cloudster plans shown below. A number of years ago Dick Huang ran me off a copy of the one he had gotten from Jim Adams, a long time experienced modeler and leader in the SAM movement. Jim had apparently drew these plans up for the SAM 1/2A Texaco event because the plans show an R/C version using a Cox .049 for power. Dick had very carefully calculated the plan's wing area to be 352.16 sq. in. and wing span as 51.70 inches.



Shown below is the title block on these plans. If the 1938 date is accurate, the Cloudster should be an Antique and it is gas powered so it meets the SAM Speed 400 electric rules.



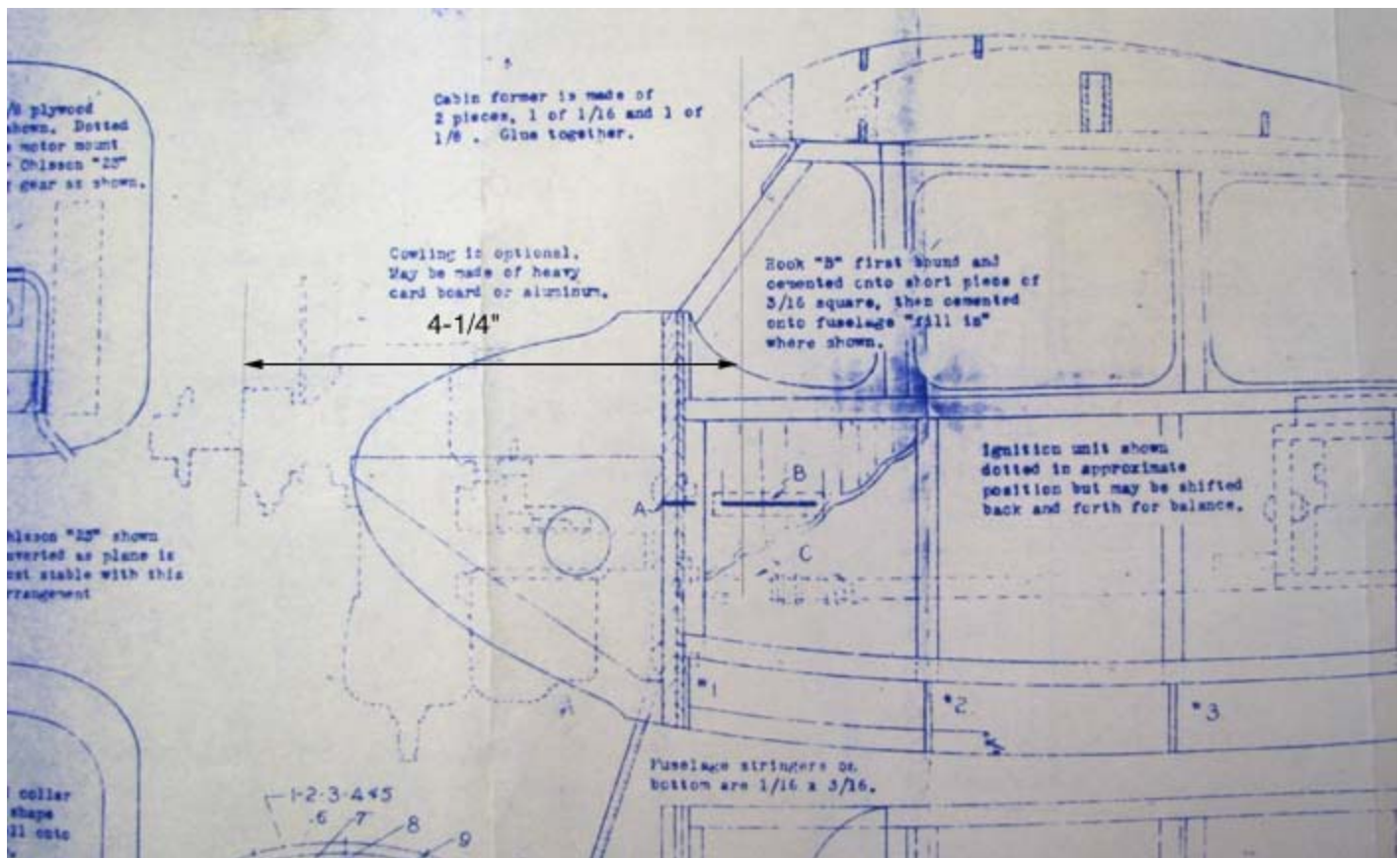
These Jim Adams plan was compared with a set of original Cleveland Cloudster plans whose title block is shown below.



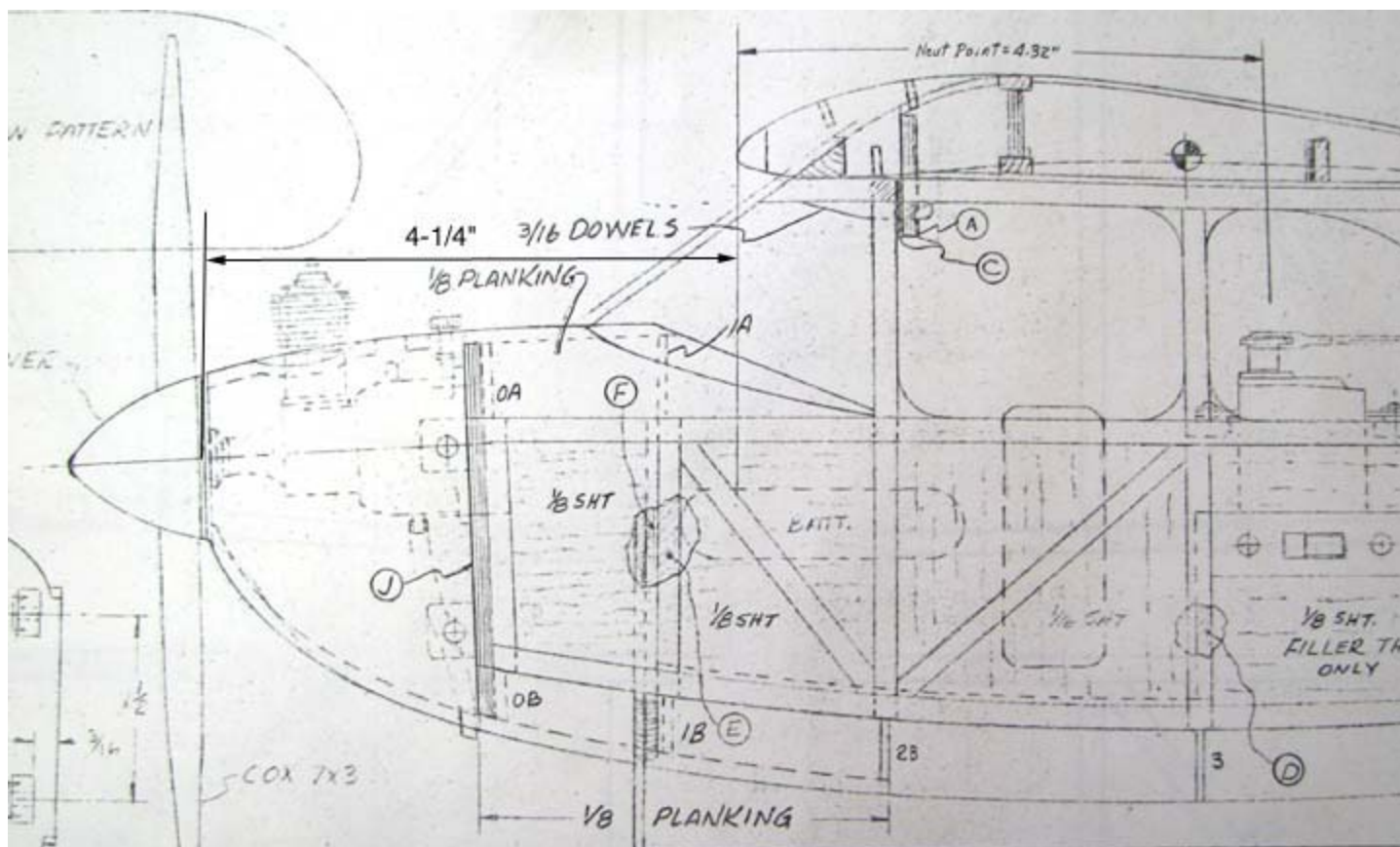
the Cleveland Cloudster plan illustrates both wing dihedral and polyhedral as shown below. Since there is no date in the title block, I do not know for sure if the Cloudster plan qualifies as an Antique or not, but it certainly is an Old Timer, which is all I need for the Speed 400 event.



I compared the Cleveland plan with the Jim Adams plan and the two check out OK, except for the nose section forward of the wing's leading edge. The Cleveland plan shows an inverted Ohlsson 23 ignition engine for power. The distance from the wing's leading edge to the rear face of the prop plane measures 4-1/4" as shown below.



For comparison, the Jim Adams plan below shows an upright Cox .049 engine for power. The front end has been modified and the firewall has been tilted for down thrust in the Cox engine. However, the distance from the wing's leading edge to the rear face of the prop plane is the same as the Cleveland plan (4-1/4") as shown below. So the Jim Adams plan also has the same nose moment as the original Cleveland plan. After consulting with Gene Wallock, Dave Harding, Jack Hiner, and Jim O'Reilly several times, I have concluded that the Jim Adams plan qualifies for the Speed 400 event.



It was thought that the Speed 400 rules contained an 8 oz/sq.ft. wing loading requirement. However, during the Cloudster plan discussions, a surprise discovery was made that there is no wing loading requirement in the Speed 400 rules. As a result, I settled on a scaled down wing area of 300 sq. in. for the Cloudster. The scale factor applied to the plan is $\text{SQRT}(300/352.16) = 0.923$. Yesterday I had the plans scale down for a wing area of 300 sq. in. and I will build the Cloudster incorporating the polyhedral wing configuration.

So after all of these discussions, calculations, and comparisons, last evening I finally got started building something! :O< I laid up the Cloudster's first fuselage side using the scaled down plans as shown below. The longerons and forward vertical members are 3/16" square, however the aft fuselage vertical members are reduced to 1/8" X 3/16" to save weigh. Notice that I am building the fuselage with the down thrust built into the firewall as per the Jim Adams plan.....Tandy

