

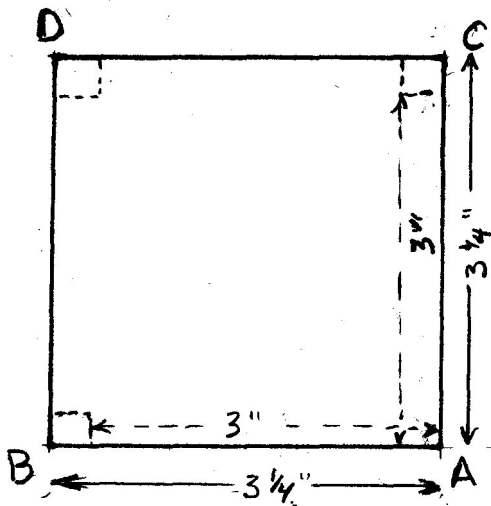
Nose Block Drilling Jig Revisited

By George White

In the January/February 2004 issue of this rag I published an article on drilling that 3° right and 3° down thrust in the nose block. Comments by friends make it evident that I could have made the article considerably more helpful.

It seems also appropriate that after going through all the excitement and fun of trimming to determine the actual thrust correction for your noseblock, you should be able to make another noseblock which is drilled correctly rather than leaving the nose of the model cobbled up with some unsightly wedges. For that purpose, the table below provides some numbers to allow that to happen.

Using the illustration below, and applying the numbers shown in the table, you can make jigs for drilling just about any combination of right and down thrust angle you wish. For those purists, I'll say up front that the angles resulting from this jig may be a small fraction of a degree off, but they certainly beat the "looks about right" drilling that I've engaged in before. I'm showing the angle tangents in the table so if you are mathematically pure and capable of sizing the thickness of the corner blocks more precisely, have at it. These numbers **only** apply if you are using a 3-1/4" square drilling plate. Any good piece of plywood will suffice for the drilling plate — I used a piece of cabinet grade 1/4" ply which I bought at Lowe's (they sell small 2'x2' pieces).



To build the jig, glue simple 1/4" square blocks of bass or hard balsa **under** three of the four corners to create the correct drilling angle for the thrust corrections you want. Corner A is the corner which touches the drill press table. In the illustration, **you are looking at the jig from the top**. The blocks **under** Corners B and C are glued to the back of the plate so that they are exactly 3" from Corner A. Corner B is the position of the block which establishes the **right** thrust angle. Corner C is the position of the block which establishes the **down** thrust angle. Corner D is the position of a block which allows corners A, and blocks B and C to touch the drill press table and prevent the jig from rocking back and forth.

For example, to build a jig to drill a noseblock so that it has a 3° right and 3° down thrust built in, using the table below, you would glue a 5/32" thick block, 1/4" square block under corners B and C. Then for corner D you'll need to experiment with the thickness of a block which just touches the table without lifting blocks B or C or allowing Corner A to be lifted off the table.

To build a jig to allow the drilling of a noseblock to have 5° right thrust and 4° down thrust, you would glue a block 17/64" X 1/4" square under corner B, and a block 7/32"X1/4" square under corner C. Then you would glue a block under corner D which would allow corner A to touch the table without lifting either corners B or C. You would have to experiment to determine the thickness of that block.

| Thrust Angle | Tangent | Block Height at 3" |
|--------------|---------|--------------------|
| 0° | 0 | 0" |
| 1° | .01745 | 3/64" |
| 2° | .03492 | 3/32" |
| 3° | .05241 | 5/32" |
| 4° | .06993 | 7/32" |
| 5° | .08749 | 17/64" |
| 6° | .10510 | 5/16" |
| 7° | .12278 | 3/8" |
| 8° | .14054 | 14/32" |
| 9° | .15838 | 15/32" |
| 10° | .17663 | 17/32" |

To drill the noseblock, place the noseblock on the jig, **front face down**, with the **top** of the noseblock pointed midway between corners C and D, (**or up as you are looking at the drawing**). The arrangement described above will allow you to have the prop shaft centered on the rear of the noseblock, but it will not be centered on the front.

If centering the prop shaft on the front is critical, such as when a spinner has to mate to the noseblock, place the side thrust block under corner A, corner B will have none, place the downthrust under corner D, and corner C will have the leveling block. To drill the nose block with this style jig, the nose block must be mounted on the jig **front face up** and the **top** of the nose block pointing midway between corners A and B (**or down as you are looking at the drawing**). This will result in the prop shaft **not** being centered on the rear of the noseblock.