

## How to scale aircraft.

To change the scale of an aircraft drawing to a size you wish to build is quite simple. We are going to scale a WW II F6F Hellcat. Since we are working from a three view drawing we need to figure out one important dimension. What we do know is the Hellcat's wingspan is 42'10". Since we are building much smaller we convert this to inches 42' 10" is 514"

The wingspan of the model we are building is 85"

### NOTE

I like to measure in 100<sup>th</sup> of an inch this makes the math easier and your drawings very accurate. You will need a machinist scale calibrated in 1/10 and 1/100. It works equally well using cm or mm.

Back to the Hellcat.. To figure out what scale we are building in divide 514 by 85 = 6.0471 or 1/6 scale. For calculation purposes 6.0471 is the **Scale Factor**.

Now we need to figure out the **Multiplication Factor** of the drawing. Measure the wingspan of the drawing. The example is 8.73". Divide 514 by 8.73 = 58.8774.

The formula is as follows:

Dimension taken off the drawing times the multiplication factor divided by the scale factor equals the dimension you need.

Example:

The measurement from the wing tip to the wing fold line is 3.23" (on the drawing) Run this dimension through the formula.

3.23" times 58.8774 = 190.17 divided by 6.0471 equals 31.44".

It's even better if you have a programmable calculator. Simply set up a program where the Scale Factor and Multiplication factor are saved in a formula. All you have to do is enter your measurement, and push calculate. The calculator provides the dimension in the scale you are working in.