SHIP MODEL SCALES

In response to frequently asked questions at meetings regarding "scale" conversion and calculation, I thought it advisable to offer the following.

1. METRIC TO ENGLISH EQUIVALENTS AND CONVERSIONS

A. Chart of Commonly Used Scale Equivalents

Metric	English	
1:12	1"=1'	
1:16	¾"=1'	
1:24	½"=1'	
1:48	¼"=1'	
1:96	1/8"=1'	
1:192	1/16"=1'	
1:384	1:12	1"=1'
1:16	¾"=1'	
1:24	½"=1'	
1:48	¼"=1'	
1:96	1/8"=1'	
1:192	1/16"=1'	
1:384	1/32"=1'	

To see how these equivalents are determined, let's take 1/8" = 1'. One inch divided by 8 equals eight parts to the inch. Multiply by 12 inches and you get 96, the number of units in one foot. For 1/16"=1', 16x12=192 and so on.

B. Converting From English To Metric

Metric Scale = 12 ÷ English Scale Fraction

Example: What is the metric scale for 1/8" = 1'

Metric Scale = 12 ÷ 1/8 = 96 i.e., 1:96

C. Converting From Metric To English

English Scale = 12 ÷ Metric Scale Ratio

Example: What is the English scale for 1:48

English Scale = 12 ÷ 48 = ¼" i.e., ¼" = 1'

2. CALCULATING SCALE DIMENSIONS

Knowing scale, and actual ship dimensions, here is a handy way to calculate scale inches:

A. English

Example: Calculate scale height of 3 foot high railing for a model built in ¼"=1' scale.

$$\text{Scale Inches} = \frac{\text{Actual Dimension (in feet) x Scale in Inches}}{1 \text{ Foot}}$$

= 3 x ¼ = ¾"

B. Metric

Same example; calculate scale height of 3' railing for a model built in 1:48 scale.

Scale Inches = Actual Dimension (in inches) ÷ Scale = 3 x 12 ÷ 48 = ¾"

For the above examples, the model built on a ¼" to foot scale would be 1/48 the size of the real-life vessel. It is, therefore, a quarter-scale model. The term scale should not be confused with size. The model is not ¼ the size of the original, but 1/48 of that size.

3. HANDY CONVERSIONS

Here are other commonly used conversions that you might find useful in your modeling work and planning:

To Convert	Multiply By	To Obtain
Centimeters (cm)	0.4	Inches
Millimeters (mm)	.04	Inches
Meters	3.28	Feet
Inches	25.4	mm
Inches	2.54	cm

PSI	0.07	KG/SQ CM
KG/SQ CM	14.2	PSI

Hope this helps. At a future meeting we can try to answer any questions.

Happy Modeling!

Nicholas F. Starace II

Back to Archives Back to Home

PSI	0.07	KG/SQ CM
KG/SQ CM	14.2	PSI