

1st Class Lesson Plan
Class Orientation

What is Plastic Scale Modeling?

It's a creative hobby that's fun, relaxing, and a break from your everyday responsibilities. It is also a great learning experience and something you can do with other members of your family. Scale modeling involves building replicas of any kind of subject. This can be done as quickly as an afternoon project, or you can take many hours to complete your model to look like a miniature replica of your subject.

History of Plastic Model Production

It all began in England during the mid 1930's with FROG, and Penguin producing the first plastic model kits. Kits produced by Airfix soon followed these. Nearly all of these model kits depicted English aircraft. Immediately following the end of WW II American kit manufacturers such as Hawk, Monogram, Lindberg, Revell, and Aurora started to produce kits for a growing market in America. Today, kit collectors prize many of these early kits.

The hobby rapidly expanded in the 1960's and 1970's, and in the 1980's Japanese companies such as Tamiya, Hasegawa, Fujimi, Otaki, introduced reasonably priced and high quality kits. The 1990's introduced still more manufacturers, many from Eastern Europe, with increasingly greater quality and specialty items. Today there are kit manufacturers from Russia, Ukraine, Korea, and China producing an ever-greater variety of kits and specialty items.

The hobby is now a worldwide business. The kit itself has also evolved from colored and clear plastic parts and standard decals. Today many model kits may include photo etched and white metal parts, resin parts, and multiple specialty decals. An incredible amount of "after market" reference documentation, additional photo etch, resin conversion parts, and decals are now available to help you complete the most accurate representation of your chosen subject. The "after market" is a huge worldwide industry and one can easily spend more on these parts than the cost of the model kit itself! Sadly few American manufacturers remain in business as the overseas manufacturers have come to dominate the plastic model industry in recent years.

The Various Scales And Their Principal Uses

Scale represents the size of your model in relationship to the size of the actual subject. For example 1/72 scale means the model is 72 times smaller than the actual subject. Remember the larger the scale numbers the smaller the actual model. When starting the hobby of plastic model building, it is important to determine what scale is best suited for you. There are a number of factors to consider. Most important is the size of your size work, display, and storage areas. That is why 1/72 is generally the scale of choice in Europe and Asia and 1/48 and 1/32 are more popular in the USA. We simply have more living and recreation space to devote to our hobby. Some of the more popular scales in use today are 1/72, 1/48, 1/32, 1/24, 1/35, 1/350, and 1/700. The chart below illustrates some of these scales converted into measurements in feet. It doesn't include all of the scales that are available. The type of model kits that commonly use a particular scale are also shown (in bold print) to assist you in choosing a model kit to meet your area of interest. (Refer to a finished model display of the various scales, provided by your Chapter members).

THE SCALES

1/700 = 1 inch equals 70 feet 1/43 = 1 inch equals 4.3 feet
1/200 = 1 inch equals 22 feet 1/48 = 1 inch equals 4 feet
1/350 = 1 inch equals 35 feet 1/32 = 1 inch equals 3.2 feet
1/144 = 1 inch equals 12 feet 1/35 = 1 inch equals 3.5 feet
1/72 = 1 inch equals 6 feet 1/24 = 1 inch equals 2 feet

Aircraft Scales 1/24, 1/32, 1/48, 1/72, 1/144, 1/200, 1/350
Military Vehicle Scales 1/16, 1/25, 1/35, 1/48, 1/72, 1/76
Ship Scales 1/96, 1/192, 1/350, 1/500, 1/600, 1/700, 1/720

Auto Scales 1/6, 1/12, 1/20, 1/24, 1/43

Reference and Research Material

An important resource to the modeler is reference materials. These reference materials can help you in any number of ways. They can help you build a particular pilot's plane, or one that was flown during a certain time period, just to name a few. These references are not limited to airplanes; they can help with any subject you choose. Fine Scale Modeler Magazine is one of the best overall sources for articles on new kit and product reviews and modeling techniques. Other sources of reference materials include the Internet, books, IPMS/USA special interest groups, and let's not forget your local Chapter. Many of its members have a vast wealth of knowledge about many subjects and are willing to help you research your project.

This Applies To Any Kit You Choose

1. It is now time to decide what scale and subject you want to start with. Include any "after market" enhancements such as photo etch parts, special decals, and paint schemes. Decide if you will display the model with the canopy open or closed, equipment hatches open or closed, engine and gun bays exposed, etc. For our class we will use a 1/48 scale Tamiya A6M2 Zero with an open or closed cockpit.
2. We will build this model kit Out of the Box (OOB) using only the parts, decals, and reference material provided with the kit.

NOTE: In the future, you may decide that you want to take your model kits to the next level by adding "aftermarket" goodies.

3. As you view the instructions study the assembly steps and understand how you should begin to assemble this kit.
4. As you visualize the assembly plans and read the instruction booklet for this model decide what you should paint as sub-assemblies.

Getting started with the Tamiya 1/48 scale A6M2 Zero

We had to deviate from the Tamiya instructions to accommodate the time constraints of the class. The constraints are primarily drying time associated with gluing, seam filling, and painting.

1. Open the model kit and layout the parts trees and assembly instructions. Inspect for broken or damaged parts including decals for scratches. Store the clear plastic parts and decals in their own clear plastic protective bags to avoid future scratches.
2. Wash the parts trees in a light solution of dishwashing liquid and warm water to remove hand and mold release oils. Carefully dry and set aside.
3. Identify all of the parts that require green chromate on the entire model while the parts are still attached to the tree. This includes P/N's A5 & A6 (Cowl), A8 (Seat), A9 (Cockpit side wall), A11 (Cockpit floor), A12 (Instrument panel), A13 (Cockpit rear panel), A15 (Control stick), (B26 & B27 (Fuselage halves), B28 (2 Lower wing wheel wells), B32 (2 Small landing gear doors), B 40 & B41 (Medium landing gear doors), B47 & B48 (Large landing gear doors). Using the airbrush, paint all of the parts listed above.
4. Remove the fuselage halves from the parts tree and clean the mating surfaces of any flashing or other imperfections that will interfere with the mating surfaces. Dry fit the mating surfaces to correct any surface imperfections. (Use the sanding sticks). Tape the fuselage halves together using a low tack masking tape to prevent them from shifting during the gluing and drying process, set aside to thoroughly dry.

ASSEMBLY TIP:

When using liquid cement you may want to use a #0 brush to apply the liquid cement. Be careful do not overload the brush with glue as a small amount is all that's need. When the brush touches the seam notice the capillary action of the glue as it runs along the length of the seam. Clean all mating parts of paint. Paint will interfere with the bonding process resulting in a weak joint. Touch up painting may be necessary.

5. Remove P/N's A1 & A2 (Top wing halves), and B28 (Lower wing) from the parts tree. If you are going to install the drop tank you must drill out the hole in B28 (Lower wing). Dry fit the mating surfaces and correct any surface imperfections. Tape, glue and dry as above.

6. Remove the cockpit assembly P/N's A8 (Seat), A9 (Cockpit side panel), A11 (Cockpit floor), A12 (Instrument panel), A13 (Cockpit rear panel), Do not remove P/N A15 (Control stick) at this time. Proceed with the cockpit assembly by first cleaning and dry fitting the parts for proper fit and alignment. Always check the assembly plans on any model you make to ensure correct assembly. Dry fit P/N's A12 (Instrument panel), A13 (Cockpit rear panel), and A11 (Cockpit floor), into the fuselage and check the alignment.

ASSEMBLY TIP:

To install A11 (Cockpit floor), A13 (Cockpit rear panel), and A12 (Instrument panel) for tack gluing, invert the fuselage and install P/N A13 (Cockpit rear panel) and A12 (Instrument panel) making sure they are seated correctly, than install A11 (Cockpit floor). Place your finger on A11 (Cockpit Floor) and turn over the model and check the fit again, if everything is aligned, tack glue the cockpit assembly only, do not glue to the fuselage yet.

7. After tack glue has set remove the cockpit assembly from the fuselage and complete the final gluing of this sub-assembly and set aside to thoroughly dry.

8. Install the cockpit instrument panel decal using the decal setting solutions and set aside to dry.

9. Dry fit and install P/N A9 (Cockpit side panel) making sure that the outside contour is flush with A12 (Instrument panel) and A13 (Cockpit rear panel) to complete this sub-assembly after the glue has dried give one final check for alignment.

10. Inspect seams of fuselage and wings for any imperfections and clean the seams with your sanding sticks and/or your #11 blade (Ask your instructor for assistance when using the #11 blade for this technique). Apply seam filling putty as require correcting any imperfections that are visible and let dry until next class. The types and uses of seam filling putty will be covered in detail in the next class.

ASSEMBLY TIP:

Several light coats of putty (covered in detail in 2nd Class) are advisable to cover badly misaligned seams than one heavy coat. When completed the seam should not be visible.

Homework:

Mask the canopy frame for painting using the supplied thin pre cut strips of masking tape. Complete the vertical frame members only and bring to the next class for painting. See the sample canopy.

End of 1st Class