A BRIEF HISTORY OF MODERN MINIATURES

By

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**SCALE**

The majority of miniature items are built to the scale TLAR, That Looks About Right. However to scale something is to adjust its size according to some proportion, such as halve its size or double its size, so that there is a defined ratio between the full size object and its miniature scale version.

A range of professional fields create scaled models. Beginning in the late nineteenth century travelling salesmen would carry accurately scaled, often working, versions of their wares so the customers could see the quality of the product and order the full-sized items for delivery. Engineers test the performance of a design at an early stage of its development without incurring the expense of a full-sized prototype. Architects build models to evaluate or demonstrate a new building in the conceptualization phase of the construction process. Filmmakers produce scale models of objects or sets that cannot be built in full-size owing to cost. Engineering prototype models built on Computer Numerical Control (CNC) machines or 3-D printers are used to demonstrate a concept to a buyer or investor much in the same way salesman’s samples were used 100 years ago.

The 1970s saw a resurgence of collectors and hobbyists as people began to enjoy more leisure time. Accurate scale modelling became increasingly important and people sought interchangeable pieces for their collections. Today hobbyists and amateur modellers now have the convenience of going to a local hobby shop or searching the internet for pieces in the proportional size they need.

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**Model Train Scales: A sample of the over 30 model train scales.**

<table>
<thead>
<tr>
<th>NAME</th>
<th>SCALE</th>
<th>GAUGE IN MM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Live Steam</td>
<td>1:8, 1:12, 1:24</td>
<td>Ridable, outdoor gauge, 1:24 being the smallest of the ridable gauges.</td>
</tr>
<tr>
<td>Gauge 3</td>
<td>1:22.5</td>
<td>64 One of the original early standardized model railroad scales.</td>
</tr>
<tr>
<td>G scale</td>
<td>1:22.5</td>
<td>Originally Groß (German meaning big) scale now Garden scale. Used for narrow gauge garden railways.</td>
</tr>
<tr>
<td>Gauge 2</td>
<td>1:29</td>
<td>The dominant scale in the US for models of standard gauge trains.</td>
</tr>
<tr>
<td>Gauge 1</td>
<td>1:32</td>
<td>Used for standard gauge garden railways.</td>
</tr>
<tr>
<td>O Gauge</td>
<td>1:48 (US), 1:45, Germany, 1:43.5 (UK, France)</td>
<td>Originally Gauge 0 (zero).</td>
</tr>
<tr>
<td>S Gauge</td>
<td>1:64</td>
<td>“S” for “S”ixty-four.</td>
</tr>
<tr>
<td>OO Gauge</td>
<td>1:76.2</td>
<td>Pronounced “Double-Oh”, this is the most common scale used in the UK.</td>
</tr>
<tr>
<td>HO Gauge</td>
<td>1:87</td>
<td>The most popular model railway scale in the world (except for in the UK).</td>
</tr>
<tr>
<td>HOon3-1/2</td>
<td>1:87</td>
<td>HO scale on narrow gauge track.</td>
</tr>
<tr>
<td>N Gauge</td>
<td>1:148, 1:150, 1:160</td>
<td>The name is derived from the track gauge of “N”ine millimetres.</td>
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</tbody>
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Scale is usually expressed as a fraction or a ratio. So if the scale is such that one inch represents one foot it would be written as 1/12th scale as a fraction, or 1:12 as a ratio. Similarly when one quarter of an inch represents one foot, the scale usually used for residential architecture, then the scale would be written 1/48th as a fraction or 1:48 as a ratio.
The first scale model automobile kits were produced by Ace and Berkeley in the mid-1940s. These were wooden. Revell introduced the first real plastic automobile kit in 1945, however Frog had been producing plastic model aircraft kits and pre-built form since 1936.

In the 1950s models that were originally produced as promotional material for automobile salesmen became popular with the public and AMT began producing 1:25 scale models to meet the demand. During the 1950s to 1960s, interest in the hobby peaked, and AMT introduced model car kits in 1958.

Today, the most popular scales for kit and pre-assembled automobiles range from 1:9 to 1:43.

DOLLHOUSEES

Dockhaus or Baby (meaning small) House was the term used to describe houses commissioned in the sixteenth and seventeenth century to demonstrate the wealth of their owners. While the earliest examples of these no longer exist, inventories of their contents do, and these provide an invaluable insight into sixteenth century life. These baby houses were not intended as toys but rather to be admired and as a vehicle to teach young women household management skills. Until relatively recently children were regarded as small, imperfect adults who needed to learn the skills required to conduct themselves appropriately in the adult world. These baby houses provided a valuable teaching aid.

Four seventeenth century houses, known as the Nuremberg Houses, complete with their original contents, are on display in Germany and a smaller but architecturally similar piece is on display in London. A splendid example of an early eighteenth century baby house is Nosetell Priory which is traditionally considered the work of Thomas Chippendale. In Holland, baby houses were cabinets, rather than architectural pieces. These grew from the “cabinets of curiosities” owned by the wealthy to display treasures newly acquired from the growing global trade routes.

By the nineteenth century the advent of industrialization and mass production drastically reduced the cost of owning a baby house thus enabling many more homes to purchase one. These nineteenth century houses were intended as toys and children were encouraged to
craft accessories for their houses thus building life skills such as woodworking and needlework.

Early twentieth century manufacturing companies included the Bliss Manufacturing Company in the U.S., Moritz Gottschalk in Germany and Tri-ang (earlier Lines Brothers) in the U.K. These houses were constructed of wood and cardboard and were beautifully lithographed. The mid-twentieth century saw the advent of metal houses such as manufactured by T. Cohn and Marx. Today most U.S. doll-houses are open at the back to allow for access whereas most European houses have a front opening door. As in the past, artisan built dollhouses are a premium, and most collectors build a house for themselves. These are most often built from kits of either punched plywood or medium density fibreboard (MDF) and are sometimes altered or combined, a practice known as “bashing”.

Up until the mid-twentieth century dollhouses rarely had uniform scales, even within an individual house. Today the most common scale for collectors is such that one inch represents one foot, namely 1/12th or 1:12 scale, whereas children’s toys are often 1:18 scale, such as manufactured by Lunby, and 1:6 scale commonly known as play scale which is commensurate with Barbie and Ken.

As with model steam locomotives, shipwrights built scaled models of ships as prototypes or demonstration models prior to investment in the construction of the full-scale design. A "museum quality" model ship will generally be at least 1:16 scale in order to show all of the detail. Model sailing ships are typically 1:48 scale, while larger ships, such as battleships, are 1:96 or 1:192 scale. Models can be bought as a kit. These are often to the scale “Fits in a Box”. This scale allows manufacturers to sell different types of ships in the same size box.

Model aircraft fall into two categories, static and flying models. Static scaled models used to be produced in large numbers for the airline industry to be displayed in travel agency offices as publicity. Today, besides being used by hobbyists, scaled static models are used in wind tunnels to test the aerodynamics of engineering prototypes. For hobbyists, the most popular scales are 1:72 1:48 and 1:32 with 1:144 scale being used for civil airliners and larger aircraft.

Flying models fall into one of three categories; free flight models which fly without any attachment to the ground, control line models which use cables leading from the wing to the pilot and radio-controlled models which have a transmitter that is operated by a pilot on the ground, sending signals to a receiver in the aircraft. While some of these are scaled, others are built with no intention of resembling a piloted aircraft.

The history of model automobiles is somewhat murky but examples of clockwork model horseless carriages date to the early 1900s. E. P. Lehman of Germany was an early producer of these tin plate model automobiles. Early scale models include a set of six die-cast 1:43 scale model cars introduced by Meccano Ltd. in 1934 to compliment their O gauge locomotive product line.
TRANSPORTATION MODELS

The first models of engines were built during the mid 1700s to demonstrate the feasibility of prototype steam engines and the first steam locomotive models were built during the late 1700s. These models were constructed to scale and were fully working prototypes of potential full-sized locomotives. The scale of these models varied but was typically 1:12 or 1:6 scale, with a gauge of 4-3/4” or 9-1/2”.

The earliest small scale commercial locomotive models were produced in mid-1850s the exact date is unclear. Prior to the 1840s scale models could be commission, these were expensive and were individually crafted based upon the original prototype models.

Between 1850 and 1870 and increasing number of companies emerged to cater for the growing demand for working steam locomotive models. Probably the most famous was company Stevens’ Model Dockyard, in England and established in 1843, who produced brass locomotives until 1912. In the US, Eugene Beggs of New Jersey began making commercial steam models in the 1870s.

It was the Märklin factory in Germany that was the first to use a numerical system of gauges, namely 0, 1, 2, 3, and 4. Today 0-gauge (32 mm), pronounced and written O gauge, is often used for children’s toy models as well as being used for scale modelling.

Books and Artwork

The history of miniature artwork is inextricably tied to the book arts. While miniature artwork can be found on the papyrus manuscripts of ancient Egypt, the skill matured during medieval period when monks skillfully embellished their religious manuscripts, which were mostly written on vellum, with beautiful illuminations. They bordered them with a red lead pigment called "minium" from which the word "miniature" is derived. Examples of fine illuminations include the Celtic Book of Kells and England's Lindisfarne Gospels.

The illuminations were cut out of these manuscripts so that they could be carried more easily and were known as the “carried miniature”. Later, miniature artists were commissioned to paint small portraits on vellum or ivory. These paintings were used in the same way we carry wallet sized photographs today.

Today's miniature artists embrace a wide variety of subject matter, media and techniques, their work being loosely defined as no more than 1:6 scale of the actual subject.

By comparison miniature books are defined as being no bigger than 3” in any measurement although the Library of Congress considers any book under 4” a miniature. They roughly fall into four categories “macro-mini”, or a book between 3” and 4” tall; the “miniature”, a book between 2” and 3” tall; the “micro-mini”, a book between 1” and 2” tall; and the “ultra-micro-mini”, or a book smaller than 1”.

Gauge is the distance between the inner edges of the heads of the rails in a railroad track. Standard gauge is 4’ 8-1/2” wide; narrow gauge is 3’ 6”.

An OO gauge model locomotive by Hornby.

While the first miniature books are considered to be the clay tablets of Mesopotamia, Diurnale Mogantinum published in 1468 by Peter Schoffer (Johann Guttenberg’s assistant and future successor) is considered the first traditional miniature book. However before the advent of the printing press, miniature books, although somewhat larger than today’s definition, were hand crafted and illuminated by monks and these novelties were enjoyed at court by the nobility and were carried into battle by knights. Because of the small size of the books they were often inlaid with precious or semi-precious stones and silver filigree.

**Tea-sets**

Miniature tea-sets fall into three categories; children’s tableware typically 1:3 scale and in Europe often given as a gift to a newborn, dolls tea-sets typically 1:4 or 1:5 scale and dollhouse scaled miniatures, most commonly 1:12 scale.

Tea-sets as toys for children first appeared in the sixteenth century in Germany. They were made in pewter and copper. When the art of porcelain manufacture was mastered in the eighteenth century, children’s tea-sets were also produced. However, because they were expensive and fragile these tea-sets were not considered toys and were only used under supervision. The mid-nineteenth century saw the emergence of more cost effective toy tea-sets made from materials such as bakelite and celluloid and with the advent of celluloid dolls the “doll’s tea-set” emerged.

While the scale of the samples varies considerably and is highly dependent upon the size of the full-sized product, many samples were either 1:6 or 1:8 scale thus making them somewhat larger than the typical toy.

Farm equipment was a natural candidate for such samples and there are some excellent examples of working plows, reapers and other farm machinery. However, samples were produced across a wide range of industries, working typewriters that can fit in the palm of your hand, shoes, a working grist mill, a brace and bit drill set, furniture, furnaces, specimen books (also called blads), just to name a few.

**Salesman’s Samples**

Salesman’s samples were predominantly produced from the late 1800s through the mid 1940s. They fall into two categories, those that work and those that do not. Working samples were more common prior to 1920. They were the salesman’s tool to sell the product. Often it is difficult to distinguish between a well crafted toy and a salesman’s sample. Vintage miniature stoves are often called salesman’s samples but they rarely are, rather they are highly detailed toys. One clue is that the salesman’s sample will almost always have the name of the product engraved upon it whereas a toy would not.

The American Antiquarian Society holds a collection of about 400 salesman’s book samples, the earliest being issued in 1836. These books were used by the agents of publishers to secure sales of a book prior to delivery (unlike earlier subscription publishing which was used to assure the success of an edition prior to printing). These miniature versions of books were at a scale of 1:1 and would consisted of a few sample sheets in a sample binding, where the sheets would often have bibliographic information, a printed prospectus describing the virtues of the work or recommendations by esteemed reviewers.