

The Comprehensive Guide to the Airfix Magazine Guides: A Technical and Historical Analysis of Vintage Scale Modeling Literature

Published: March 9, 2025 | Index ID: #166

The evolution of scale modeling as a disciplined engineering-lite hobby can be traced back to several pivotal publications that emerged during the mid-20th century. Among these, the **Airfix Magazine Guides** stand as a foundational pillar for hobbyists, engineers, and miniature historians. Launched in the early 1970s, this series of 27 primary works provided the technical framework necessary for transitioning from basic kit assembly to advanced scratch-building and conversion techniques. This analysis explores the technical specifications, editorial philosophy, and procedural methodologies pioneered by authors like Gerald Scarborough within this iconic series.

Historical Context and Editorial Origins

In 1974, the scale modeling landscape was undergoing a significant shift. No longer content with the simple 'out-of-the-box' assembly popularized in the 1950s, the modeling community began demanding higher fidelity, historical accuracy, and structural modifications. Airfix, then a dominant force in the plastic kit industry, collaborated with **Patrick Stephens Ltd** to produce a series of concise, A5-sized hardback guides. These books were designed to be 'bench-top' companions—durable enough to withstand the rigors of a workshop while providing high-density information.

The series, predominantly authored or edited by **Gerald Scarborough**, focused on the 'Airfix Magazine' ethos: that a kit is merely a starting point. The technical depth found in these guides covered everything from 1/72 scale aviation to complex dioramas and napoleonic figure painting. By the time the series reached 27 volumes, it had effectively mapped out the entire ecosystem of plastic modeling available at the time.

Technical Specifications and Physical Architecture

From a bibliographic and technical standpoint, the Airfix Magazine Guides adhered to a strict structural template designed for utility. The physical and editorial parameters were as follows:

- Dimensions: Standard A5 (approximately 148 x 210 mm), optimized for limited workspace environments.
- Binding: Initial editions featured hardback boards with laminated covers, ensuring longevity against glue spills and paint splashes.
- Printing: Primarily black and white lithographic printing. While this limited color reference, it prioritized high-contrast photography that highlighted structural modifications and seam lines.
- Pagination: Typically ranging from 64 to 96 pages, ensuring a high information-to-weight ratio.

The series' technical brilliance lay in its use of **orthographic projections** and exploded-view diagrams. These visual tools allowed modelers to understand the internal volumes of a subject before attempting external modifications.

Core Methodologies: The 'Scarborough' Philosophy

Gerald Scarborough's contributions to the series defined what many now call 'The Golden Age of Conversions.' His

methodology was rooted in three core technical principles:

1. Structural Conversion (Kit-Bashing)

Scarborough advocated for the 'cross-pollination' of kits. For instance, in *Airfix Magazine Guide 1: Plastic Modelling*, he details the mathematical process of scaling down components from a 1/32 scale kit to fit a 1/72 scale frame. This required a deep understanding of **linear scaling factors** and the properties of polystyrene plastic under thermal stress.

2. Scratch-Building with Raw Materials

The guides introduced the use of non-kit materials such as **Plasticard (styrene sheet)**, brass wire, and expanded polystyrene. The technical workflow for scratch-building a component involved:

- 1. Drafting the component in a 1:1 ratio relative to the model's scale.
- 2. Scribing the pattern onto a styrene sheet using a hardened steel scribe.
- 3. Using 'score and snap' techniques to ensure clean edges.
- 4. Laminating layers for thickness and structural integrity.

3. The Chemistry of Adhesion and Finishing

During the era these books were written, the chemical composition of adhesives was shifting. The guides provided technical breakdowns of **liquid poly cements** versus tube glues, explaining the process of **solvent welding**. In solvent welding, the adhesive temporarily liquifies the plastic surfaces, allowing the polymer chains to intermingle and form a monolithic bond upon evaporation.

Comparative Analysis of Key Volumes

To understand the breadth of the series, we must examine the specific focus areas of the most influential volumes. The following table provides a comparison of the technical scope found in selected primary works.

Guide No.	Title	Primary Technical Focus	Key Methodology Taught
1	Plastic Modelling	Fundamentals of Assembly	Solvent welding and seam filling
3	Military Modelling	AFV Modifications	Creating zimmerit and welding textures
13	German Armour of WWII	Historical Accuracy	Camo pattern geometry and weathering
19	Model Soldiers	Anatomical Scaling	Converting multi-part 54mm figures
27	Modelling Photographed	Technical Documentation	Macro photography and depth of field

Technical Workflow: Advanced Wing Conversion (Case Study)

Using the principles found in *Airfix Magazine Guide 1* and related aviation volumes, we can reconstruct a typical technical workflow for converting a standard aircraft wing into a 'flaps-down' configuration. This procedure exemplifies the rigorous approach encouraged by the series.

Phase 1: Measurement and Calculation

The modeler must first calculate the **chord length** of the flap area. Using a vernier caliper, measurements are taken from the trailing edge to the spar line. If the model represents a Spitfire, the modeler refers to the technical drawings provided in the guide to ensure the angle of deflection (usually 85 degrees for landing) is mathematically accurate.

Phase 2: Surgical Extraction

Using a razor saw (a tool heavily promoted in the guides for its thin kerf), the modeler makes a vertical cut through the upper and lower wing halves. The goal is to remove the flap section while losing less than 0.2mm of material to the saw blade.

Phase 3: Structural Reconstruction

Because the interior of a plastic wing is hollow, the modeler must 'box in' the resulting gap. This involves cutting ribs from 0.010" styrene sheet. The guide provides the formula for spacing: $S = L / (n+1)$, where S is the spacing, L is the total length of the flap bay, and n is the number of ribs.

Phase 4: Final Integration

The new flaps are attached using a wire hinge to provide mechanical strength. This technical leap—moving from static plastic to reinforced mechanical joints—was a hallmark of the Airfix Guide transition.

Mathematics of Scale in the Airfix Series

A recurring theme in the series is the mathematical precision required for cross-scale comparisons. The guides often required modelers to convert measurements between Imperial and Metric systems, as well as between different scales. The **Scale Factor (SF)** is calculated using the formula:

SF = (Desired Scale / Original Scale)

If a modeler is using a 1/48 scale drawing to detail a 1/72 scale model, the multiplier is 0.666. The guides taught modelers to apply this factor to every dimension of a scratch-built part to maintain **dimensional fidelity**. This level of technical rigor elevated the hobby from a pastime to a form of miniature engineering.

The Evolution of Tools and Materials

The Airfix Magazine Guides were instrumental in introducing professional-grade tools to the domestic market. Before these guides, many hobbyists used kitchen knives and household brushes. The series standardized the following toolset:

- The Pin Vice: A miniature hand drill used for boring out gun barrels and installing wire reinforcements.
- Wet and Dry Abrasive Paper: Used in grits from 400 to 1200 for achieving aerodynamic smoothness on fuselage joins.
- The Airbrush: While earlier guides focused on brushwork, later volumes introduced the fluid dynamics of airbrushing, discussing PSI (Pounds per Square Inch) settings and paint viscosity.
- Putty and Fillers: Technical explanations on the shrinkage rates of nitrocellulose-based putties versus two-part epoxies.

Preservation and Collective Value

Today, the Airfix Magazine Guides are sought after not just for their nostalgic value, but as historical documents of modeling evolution. Collectors categorize them by their 'edition status' and condition. The hardback versions of the first five volumes are particularly prized due to their lower print runs compared to the later softcover reprints.

Identification Table for Collectors

Feature	First Edition (1974-1977)	Later Reprints (1980s)
Binding	Hardback with Laminated Boards	Cardboard Softcover
Paper Stock	High-Gsm Matte Paper	Standard Pulp Paper
Price Tag	Decimalized Pence (e.g., 95p)	Higher GBP or Multi-currency
Publisher Logo	Classic Patrick Stephens Ltd 'PS'	Updated Airfix/Humbrol Logos

Troubleshooting Common Modeling Failures

One of the most valuable aspects of the series was its 'troubleshooting' approach. The guides anticipated failure modes that occurred during complex builds. Here are three common issues addressed in the technical text:

Issue: Silvering of Decals

Cause: Air trapped under the carrier film due to microscopic surface roughness in the paint. **Solution:** The guides recommended applying a gloss varnish (the 'Future' floor polish method or Humbrol Gloss) to create an optically flat surface, followed by the application of a setting solution like *Micro Solto* chemically soften the decal film into the recesses.

Issue: 'Orange Peel' Paint Texture

Cause: Paint drying mid-air before hitting the model surface, often due to high PSI or improper thinning. **Solution:** Adjusting the solvent-to-pigment ratio to 60:40 and reducing air pressure to approximately 15-20 PSI, a technique detailed in the series' later volumes on finishing.

Issue: Structural Sag in Large Scale Models

Cause: The 'creep' property of polystyrene under its own weight over time. **Solution:** Internal bracing using balsa wood or aluminum tubes, a structural engineering solution provided in the *Basic Guide to Modelling*.

Summary and Technical Legacy

The Airfix Magazine Guides represents more than just a series of 'how-to' books; they are a 27-volume encyclopedia of miniature engineering. By formalizing the techniques of kit-bashing, scratch-building, and historical research, Gerald Scarborough and his contemporaries provided a roadmap that current digital tutorials still follow. The transition from 1970s monochromatic guides to today's 4K video tutorials has seen a change in medium, but the core technical principles—solvent welding, dimensional scaling, and structural integrity—remain exactly as they were laid out in 1974.

For the modern enthusiast, these books offer a masterclass in 'resourceful modeling.' In an era of 3D printing and pre-painted parts, the Airfix Guides remind the modeler that the greatest tool in the workshop is not a machine, but the manual dexterity and mathematical precision of the artisan. The series continues to be a primary reference for those looking to master the foundational mechanics of the hobby, ensuring that the legacy of Patrick Stephens Ltd and Airfix remains at the heart of the modeling community for decades to come.

Tags: [#Airfix](#) [#Scale Modeling](#) [#Gerald Scarborough](#) [#Vintage Books](#) [#Model Engineering](#)

