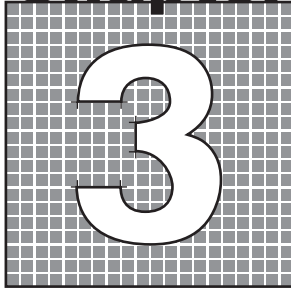


Chapter



Laying Out Plan Views

3.1: Overview

Now that you have reviewed some important drafting standards and conventions, it's time to get to work! The principles outlined here will help you lay out your plans to produce blueprints of just about any subject. This will conclude **Section 1** of this volume.

From these drawings you will then be able to make *measurements* in order to proceed to the next step – creating accurate templates and construction patterns for your project. In **Section 2**, you will see how to make these patterns from information contained in the principal plan views.

3.2: Getting Started

As discussed in **Chapter 1**, orthographic projection makes it possible to take information from two existing views and derive missing details in a third view. This is truly the secret to creating blueprints! By starting with basic information about your subject such as key dimensions, you can begin assembling your drawing like pieces of a puzzle. Using the principles of projection to find the missing details, your plans can be filled in, one piece at a time. Once all the details are in place, a complete picture of your subject will emerge in plan view form.

Figure 3.2.1 shows a typical set of “presentation” blueprints. This illustrates the overall concept of using projection to transfer details from one view to another. Because this process is very deliberate and precise, it can seem somewhat tedious. Rest assured, however, it always works! To see exactly how it can be done, take a look at the following exercise. This example will demonstrate how to create presentation blueprints for a model airplane. It will walk you through the entire process step-by-step.

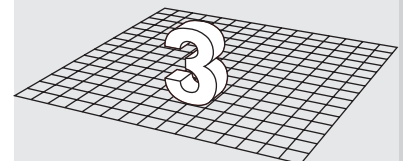
In order to create plan view drawings of any subject, you must have a starting point. Ideally, this might include detailed dimensions of your subject. With that kind of information you can create very accurate blueprints with the least amount of effort. When you lack such reference, however, the process of making blueprints can become more difficult. Nevertheless, it is still

NOTE: Underlined terms appear in the Glossary.

The drafting concepts illustrated in this chapter apply no matter what computer drawing program you use (CAD or other). The specific tips and techniques outlined here, however, are geared toward drawing with a *computer illustration program* since this is the easiest method available for most modelers.

For a step-by-step guide that will get you up and running quickly, be sure to read *How To Draw Anything With a Computer: A Quick-Start Guide for the Craftsman, Hobbyist, and Do-It-Yourselfer*, part of the *Modeler's Notebook Reference Series* available from:

www.ModelersNotebook.com



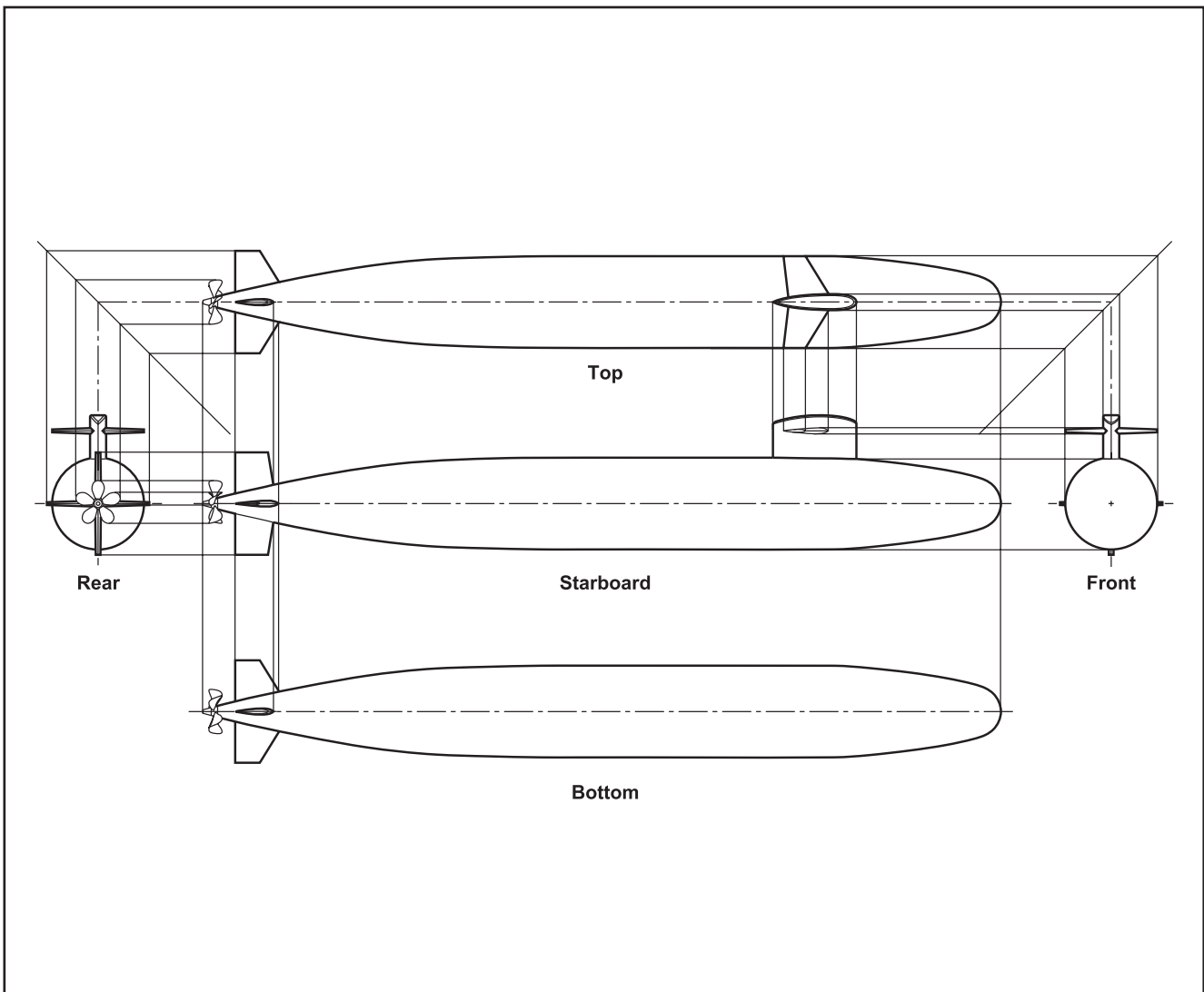


Figure 3.2.1. Use *orthographic projection* to draw multiple views of any subject.

Think of the blueprinting process as a problem-solving exercise. In this way, it can be very similar to working on a puzzle. Like a picture puzzle, you can use existing information to derive or resolve the missing pieces in a blueprint.

possible to create accurate plans for a subject – even when you do not have detailed measurements from which to work. The techniques presented in this chapter will show you how to draw your plans using both known dimensions and photographic reference.

If you recall the discussion of projection in **Chapter 1**, at least two existing plan views are required to generate missing details in third view. Therefore, to get started, you need sufficient information up front to draw at least two different plan views of your subject. Once you get the ball rolling, you can begin plotting or “resolving” the remaining plan views. One at a time, the details needed to make each view will fall into place. By the time you are done, you will have sufficient information to begin building your project!

Rather than simply reading about all the many steps needed to make plan view drawings, in this chapter you will see “hands on” how to make blueprints

by walking through the process of creating actual plans. For the purposes of this example, the goal will be to draw blueprints that depict the overall form of a model airplane. These “presentation” drawings will show what the subject looks like in plan view form. You can then use this information to create more detailed plans that depict every structural detail of the model.

To keep this example as simple as possible, however, let’s start with the basics and attempt to draw just the overall shape of the airplane. By the time you are done, you will have an excellent understanding of how to use orthographic projection in your own projects.

3.3: Using Photos as Templates

Before you can begin drawing, it is very helpful to have a guide or template. (It is possible to create your own blueprints using nothing but a series of measurements, but this may be more difficult for some subjects – it is also less than intuitive.) If you can find an existing blueprint or 3-view drawing of the subject, this will make an excellent starting point and can save you much time and effort. On the other hand, if you cannot find any existing drawings to use for reference, you will have to start from scratch.

Without detailed measurements, in order to draw a subject such as the airplane in this example, at a *minimum* you’ll need to locate a suitable side view photo to use for reference. If you can find good reference images of other views, that’s better still. Keep in mind, however, for any photo to be of value as a template, it should be as close to a perfect “orthographic view” as possible.

Distortion in Photographs

If you recall the discussion in **Chapter 1**, the term “orthographic view” basically means “flattened view.” This describes the concept of removing all *visual perspective* from a drawing. Unfortunately, your eye and the camera both see perspective in everything. As a result, no photo can ever represent a true “orthographic view” of something. The best you can do is control certain factors while taking the photo in order to minimize perspective distortion.

An example of a possible template image for the subject airplane is shown in **Figure 3.3.1**. (This is not actually a photograph, but is meant to illustrate what a reference photo might look like.) How can you tell if this image is truly suitable for use as a template? The only way to know for sure is to *analyze* it to determine how the subject is oriented in relation to the camera.

Do you remember the old adage “Photos don’t lie?” Well, this is not necessarily true! In fact, photographs can sometimes be extremely misleading when you are using them as templates for drawing blueprints. Because they can contain a great deal of perspective distortion that can fool your eye in

If you would like to practice drawing these blueprints as you read through this exercise, scan the reference image shown in **Figure 3.3.1** into your computer to use as a template. See **Appendix B** for detailed information on how to create and work with scanned image templates.