

CANBERRA MODEL SHIPWRIGHTS SOCIETY

SCALE MODELING SHIPS/BOATS

AN INTRODUCTION

Introduction

The Canberra Model Shipwrights Society has the objectives of fostering and maintaining interest in building and constructing scale model ships, boats and associated fittings, gear, equipment, armaments, and relevant items and structures and the pursuit of excellence in the field.

Over a period of some years and after mounting many displays and exhibitions at which numerous questions and comments were received from interested public, there was a need to produce a document which provides an introduction and initial guidance to prospective new devotees of the ship building hobby.

Notwithstanding that the Society has a very detailed resource CD which covers in detail many areas of model wooden ship building, it does not address where/how to start. There are a many thought provoking aspects which confront the prospective ship modeller and these are identified and briefly discussed in this document.

Where and how to start

Some of the things to be considered before starting are;

- How do I decide what to build?
- How much does it cost?
- How long does it take?
- What skills do I need?
- What are they made from?
- Where do I get the skills and advice?
- How much research do I need to do?
- What scale to build?
- What tools and equipment are required?
- What method of construction do I use?
- Will I need plans or drawings?
- What is scratch building?

How do I decide what to build?

Most people build models that they have an interest in or some personal link to. Particular interests in ship modelling can include;

- Sailing, naval, merchant, ancillary ships such as.
- Period multi mast merchant or naval sailing ships.
- Period schooners, baroques, clippers etc.
- Fishing vessels , trawler, tuna fishing boats.
- Open boats , jolly boat, launches, dinghies.
- Modern merchant ships, Cargo ships. oil/gas tankers, cruise ships , container ships.
- Modern Naval vessels, Battleships, Cruisers, Destroyer, Frigates, Patrol Boats, Armed Launches, submarines.
- Tugs.
- Paddle steamers.
- Passenger/car ferries.
- Research vessels.
- Maritime ordnance.
- Maritime dioramas.

How much does it Cost?

Model kits are available from only a modest \$25-30 (for basic plastic kits) to more than \$ 2200 for large, complex wooden kits and this generally does not include adhesives and finishes. Whereas scratch building may have lower material costs, however there will be a need for additional research, skills, time and equipment in the construction and assembly of the components.

How long does it take?

Simple plastic kits can be built in a weekend. Whereas more complex kits with a lot of detailed rigging or deck features can take 2-3 years, if worked upon a part time basis. The same timescales can also apply to scratch building, as this involves the manufacture of the component parts before/during assembly. So there is a need to have a reasonably high degree of enthusiasm and motivation to complete the model.

What skills do I need?

Listed below are some of the skills which contribute to successfully build in a model;

- Ability to read and understand plans and interpret drawings and instructions.
- Be able to use basic hand tools.
- Be able to work with a reasonable degree of accuracy.
- To know where to find out information relating to the model (research aspects are outlined further below).
- To have some basic knowledge of materials, e.g. timber, plastics, adhesives, finishes. etc.
- Be able to manufacture basic jigs and fixtures needed to assist with construct the model.
- Have access to a glossary of Marine Terms (A copy is included on the CMSS Resource Disk).

What Are They Made From?

Model ships can be built from a variety of mediums. Generally they will be made from:

- Wood.
- Plastic or resin.
- Card (printed cardboard or paper).

Where do I get skills and advice?

Help from someone who has built a model ship before can be invaluable. Contact a club/society who has an interest in construction of model ships. Most clubs/societies will have members who have long term experience in ship modeling and will have personal libraries containing a vast data base of information on the skills needed to construct a model.

Other sources include ship modelling publications, magazines and the internet. Much of the information required will depend on the type of model being constructed.

How much research do I have to do?

Research can be part of the fun of building a scale model. Outcomes can include improving the authenticity, identifying the historical significance of the model, broadening your knowledge base and improving the constructors research skills.

Listed below are some of the local primary sources for collecting information;

- Australian National Archives and State Archives.
- Australian National Library/Municipal libraries.
- Australian National Museum.
- National Maritime Museum.
- Royal Australian Navy - Sea Power Centre.
- Australian Defence Force Academy (University of NSW).
- Australian War Memorial.
- Scale Model Clubs/Societies.
- Local and Privately operated museums.

Detailed sets of plans (scaled and with accurate dimensions) available from commercial outlets.
Outlined sets plans (may not be scaled or dimensioned).
Drawings (detailed or general outline).
Photographs (black and white/colour).
Reference Books (modeling techniques and individual shipbuilding subjects).
Magazine articles on skill and ship building.
Glossary of Marine terms. (The maritime industry like most trades has a long founded list of terms peculiar to ship building and it is an advantage if the novice shipbuilder has access to a list defining these terms).
Internet (there are literally thousands of scale model sites on the internet).
Computer files/DVDs based on construction of individual models and skill sets.

What Scale to Build?

Commercially available kits are available in a large range of scales ranging from 1/4 scale to 1/2400 and nearly everything in between. Some ship model subjects in the plastic model range use 1/24, 1/32, 1/35, 1/72 and 1/144 scales are relatively common, Model ships can range from 1/25 to 1/2400 depending on the subject and size of the parent ship/boat.

Some of the things to consider are;

What level of detail do you want your model to show.
Consider, that when the model is completed how much space do you need to display it.
The larger the scale of the model will also impact on the cost of the project.

What Tools and Equipment are Required?

The basic tools needed to commenced model ship construction include but are not limited to;

Measuring/Marking out

300mm/12inch steel rule
Tape measure (preferably in Imperial and Metric measurements)
Pencils (a retractable pencil is suggested , lead can be purchased in differing grades e.g. 6b, HB)
Compass (can be used for marking circles or as a measuring caliper for transferring measurements)
Eraser (for correcting mistakes in marking out)
Right angle square (a small 50/70 mm steel engineers square for squaring up components)

Cutting/Filing

Cutting knife(s) (Stanley knife, retractable knife, hobby knife ,scalpel)
Saws (Engineers hacksaw, junior hacksaw, fret saw or razor saw)
Cutting Board (a self-sealing cutting mat this avoids damage to the bench/table surface)
Cutters (there is a wide range of cutters for cutting wire, components of sprues etc)
Files (small flat file, jewelers/riffler files)

Holding/Clamping

Clamps (small metal/plastic clamps, clothes pegs, G clamps, rubber bands)
Tweezers (for holding small parts, rigging etc many types are available in differing forms)
Bull Dog clips
Small model vice
Small hammer

Abrasives

Sandpaper (available in many types and grades, cloth backed abrasives last longer and come in grades from 40 grit to 1200 grit)
Abrasive boards (these can be made using a strip of wood with abrasive glued to it or they are also purchased ready made in model shops)

Drilling /Probes

Hand/electric drill, (an Archimedes drill or pin drill is ideal for small diameter drills)

Drills (small diameter drills 1mm and smaller)
Small probes (these can be made with a piece of dowel and nails/wire, dental probes)

Brushes

Manufactured bristle brushes
Natural bristle brushes

This list is a basic starter tool kit, other items such as a Dremel, Moto or Proxon tool, drill stand, scroll saw, bench saw, digital calipers, and so on can be added as experience and need arises.

What Method do I use?

To a certain extent the type/medium of the model selected to be built will impact on the method of construction. For example models come in various types they may be either

Pre-formed or pre-cut.
Partially cut out kits with additional material and/or parts.
Component parts to be assembled.
Scratch built comprising of plans/drawings and materials only.

Will I Need Plans or Drawings?

Kits will generally contain a set of drawings for the particular model being built. In some instances it is advisable to make multiple copies of some parts or all of the drawings. This can be useful for a variety of reasons, particularly when scratch building or card modelling. Often it is a good idea to keep a master set to be kept and filed should you wish in the future to build another model of the same item. Have one copy to use as templates and one copy to use for build/ assembly that will probably get pretty dirty or damaged.

What is Scratch Building?

Scratch building is generally building straight from a plan rather than from a kit. Scratch building gives you much more flexibility in construction methods, materials and scale. If scratch building is your interest you can decide on any scale you desire. Depending upon your plans or other source information you may have to do some math to convert your information to the scale you want to build.

Before you start

It is strongly recommended that before embarking on the purchase of a model ship that you make contact with a local scale modeling club/society, with an interest in building model ships to seek advice.

When deciding what to build, select a basic model which is not too complex, is capable of being built within your level of skill/capability and is not overly expensive. A high proportion of novice shipbuilders select large complex models as their first ship model and many never finish them.

Most members of model clubs/societies have a wealth of experience/ knowledge and will happily provide advice and information on building techniques and skill development to anyone interested.

The Canberra Model Shipwright Society has over many years developed a Resource CD which has detailed information relating to the methods of construction and techniques for building model ships. It is made available to members upon request. The CD contains information on:

Hull construction.
Rigging.
Deck Fittings.
Sails.
Ships Boats.
Painting ,Staining and weathering.
Metal Work.
Cases for Models.

Glossary (of marine terms).

Miscellaneous (adhesives, dressmakers pins, wood filler, decimal equivalents for drills/wire gauges).

Some pointers for construction

Consider an appropriate work space:

Ensure that the bench/table has a hard surface to work upon.

Avoid carpeted areas ,where parts can be lost

Have a chair /seat which is comfortable to work at for prolonged periods.

If possible have the bench located in natural light or have a good source of artificial lighting.

Prepare before you begin:

Read and understand the plans/instructions before commencing construction. Many kits will include step by step instructions and a defined sequence of assembly.

Identify the components in the kit prior to starting so that they can be selected in sequence of the build.

Assemble your tools, adhesives, drawings/instructions in a well-lit and ventilated work space preferably on a bench or table with sufficient space to construct the model.

Consider the type of adhesives needed for example PVA, superglues, contact adhesives, plastic cement, Special adhesives for unusual materials.

The use of jigs and fixtures/templates make construction and assembly easier and more accurate.

Plan to build in stages, in many cases progressive building of sub-assemblies is far more practicable.

During construction it is sometimes necessary to fabricate major components of a model from cardboard in order to check the accuracy of the shown dimensions. Sometimes drawing measurements and tolerances are inaccurate and following the cutting out of components the result can be that they will not fit together and material and time can be wasted.

Summary

This document is not intended to explain how to build a model ship/boat but to give the prospective builder some level of guidance as to the things to be considered. Model ship building is a very enjoyable hobby with the end result providing a high degree of satisfaction, a sense of achievement and pride in saying **“I built that model ship”**.

Always remember that model building requires a level of ongoing enthusiasm, motivation, patience and determination.

The Canberra Model Shipwrights Society welcomes new members. Details can be found on the societies website at:

canberramodelshipwrights.org.au

(version 1.)