

Setting Up a Professional Papermaking Studio

INTRODUCTION

Papermaking studios are found in many different locations. Printmaking, book arts, sculpture, visual arts, fibers, and education departments have all supported papermaking. Knowing how paper is made and actually making it allows printmakers more control over their projects, as well as imparting a deeper understanding of paper and its possibilities and limitations.

FACILITIES

Facilities for papermaking range from a small studio space used occasionally to large well supported spaces. Water is the biggest consideration for a facility. The ideal set up would have a utility sink in the room to which a hose could be attached. However, programs have been run with water being carried in. A floor drain is helpful as water is certain to end up on the floor. Temporary solutions include laying heavy waterproof tarps down. A mop and bucket are always a smart thing to have around. You can also control water with tables with lips that drain into a bucket, and collection devices on equipment such as presses.

EQUIPMENT

The type and quality of a studio's equipment will depend on demand and budgetary constraints. You can set up a papermaking studio for under \$100.00 for making "blender paper" only, or \$10,000 for a complete studio with a beater, large press and a drying system. A basic facility could cost between \$2,000.00 and \$4,000.00 for a system which includes: a whiz mixer, small press, misc. vats and tools, but no formal drying system or beater.

Upgrade equipment as funds become available. Usually when upgrading a facility, everything that was purchased before will still be useful. For instance, a Whiz Mixer will still be valuable for mixing color and additives long after a Hollander beater has replaced it as the primary machine for making pulp.

Equipment needed for a studio includes:

- Pulp processing equipment
- Pulp storage containers (plastic garbage cans)
- Vats
- Felts
- Moulds and deckles of various size
- Press and press boards,
- Drying System
- Other Equipment

Pulp Processing Equipment

Every well equipped papermaking studio should contain a beater, such as the **Hydra-Hollander Beater** (*handout available*), preferably with a stainless steel tub for excellent durability, and an amp meter for easier control of beating. The **Hollander beater** allows the most control over the process. It can process raw materials and fibers as well as prepared pulps.

To re-hydrate large amounts of pulp quickly and easily, our **Whiz mixer** is indispensable. Almost all of our sheet pulps can be used processed in the Whiz mixer alone. Paper can also be recycled in a Whiz Mixer. The **Whiz Mixer** is a good choice for the studio when a Hollander beater is not forthcoming. The least convenient pulp processor is a blender. It is the most time consuming method and blenders will not last under constant use.

Pulp storage containers (plastic garbage cans)

Plastic garbage cans and 5 gallon plastic buckets are most commonly used to store pulp and color it before it goes into the vat.

Vats

A variety is essential for the well equipped studio. The vats need to be large enough to easily maneuver the mould and deckle.

A few large vats and 8 to 10 smaller vats should keep production moving. Our small and large black vats are cost effective. We also have an extensive list of commercial Polyethylene vats in various larger sizes.

Moulds & Deckles:

The ideal studio would contain a variety. Our Honduras mahogany **Custom Moulds** are the finest, ranging in size from 8 1/2" x 11" to 30" x 40", available wove or laid, and ranging in price from \$675 to \$4000. Experience the best - the studio should have at least one to be able to recreate the fine art and craftsmanship behind the best handmade papers.

Our mahogany **Apprentice Moulds** are classics - available in 4 sizes - try the 16" x 20". Built to withstand repeated use. *Used widely in many studios and universities.*

The **Simple Mould** and the **Big Simple Mould** are durable yet affordable. Available in 2 sizes: 8 1/2" x 11" and 11" x 17".

A great and inexpensive to introduce papermaking to your students is to have them build their own simple moulds and deckles. We offer what they need - **heat shrinking screen, epoxy, stainless steel staples and instructions**. For those who want a challenge, we also offer our custom moulds unassembled or unsewn (woodworking skills very helpful).

Felts

If you can measure and cut - the best value is the 78" x 80" **17L** polyester felt. Also available cut to size or by the linear foot. A good quality couching felt, yet easy to maintain.

We also offer a variety of wool and wool blend felts for fine papermaking.

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Press and press boards:

A press capable of pressing sheets up to 22" x 30" is a good size for a professional setting.

Our **20 Ton Press** is of proven high quality which will stand up to heavy studio use. We have other smaller designs available which could be considered semi portable for situations requiring them to be stored after use.

Press boards are easily made from 3/4" or 1/2" plywood preferably without voids such as marine grade or imported birch plywood.

Drying System:

In studios where volumes of paper are being made, a drying system such as our **Santa Ana Dryer** is useful to insure paper is dried flat in a timely manner. *Handout available* Other systems of drying include board drying on flat surfaces, such as formica, coated masonite or windows. Blotter exchange methods of swapping wet blotters with dry ones.

Additional equipment and accessories:

Other equipment useful in a university setting includes: vacuum systems handout *available*, equipment for oriental papermaking and equipment for making 3-D molds for casting. We also manufacture custom equipment to meet your specific requirements. Evaluate your needs by consulting good books and experienced studio papermakers.

BOOKS

These are our favorite books for the beginner and advanced papermaker alike:

The Art and Craft of Papermaking,

Sophie Dawson- Highly recommended all around book

The Art of Papermaking,

Bernard Toale - Good coverage of all kinds of paper techniques

Sculpture: Technique-Form-Content

Arthur Williams -Good section on mold making techniques

Teaching Hand Papermaking: a Classroom Guide

Gloria Zmolek-Smith - Highly recommended for the classroom.

The Papermaker's Companion,

Helen Hiebert - Excellent all around book

SUPPLIES

For the best price, buy the largest quantity of an item to suit your needs. Some chemicals have a shelf life such as sizing. If you will be producing a large volume perhaps having a wholesale account would suit your needs.

PIGMENTS & CHEMICALS

You will need to experiment to find the technique that works best for you. The following are suggested:

Pigments - Our Aqueous Dispersed Pigment Sample Kit is a great way to get started - 9 aqueous dispersed colors produce rich, vibrant colors. Very concentrated colors. Also try our pearlescent pigments for wonderful effects. Not appropriate for use with children.

Retention Aid - locks the pigments, dyes, fillers and other additives into the fiber. Used at a rate of 1 1/2oz. to 4 1/2 oz.per pound of dry pulp

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Methyl Cellulose - used as an adhesive, and sizing - adds a little strength. Totally non-toxic, a food grade additive, safe if digested - safe for use with children. 1oz. will make 1 to 1 1/2 cups of stock solution; less than a cup of solution is needed per pound of fiber.

Liquid Sizing - used internally to make the finished paper less absorbant. Used externally to add extra strength. 8 tsp. per pound of dry fiber.

Formation Aid - suspends and separates the fibers for making very thin sheets. 1/2 to 1 tsp. per quart of water; 1 gallon of solution per 15 gallon vat of water. Also, keeps pulp painting bottles free flowing.

Soda Ash - for cooking oriental fibers - 1/2 to 3/4oz. per 3 1/2 oz of fiber.

***Please exercise caution.**

For safety and studio hygiene, keep on hand **Gloves, Dust Masks and Aprons**. To protect your hands try our **Barrier Cream**.

We provide chemical instruction sheets with purchased chemicals. Please ask for the related **MSDS (Manufacturer's Safety Data Sheet)**.

Organizations of interest:

Friends of Dard Hunter

International Association of Paper Makers and Paper Artists.

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