



November 17, 2014

JennyMcMaster

# A Hollander Beater for the Studio Cafe

A Proposal

# A Hollander Beater for the Studio Café: A Proposal

## Executive Summary

This proposal recommends the acquisition of a **Hollander Beater** by the Studio Café. A Hollander beater is a machine used to beat paper pulp from plant fibres. It would give the Studio the capacity to offer paper making classes alongside its selection of photography, film, water-colour and oil painting workshops.

Why purchase a Hollander Beater? While offering experienced artist-educators and a great location, the Studio Café is still having difficulty filling its classes. This is likely because serious art students are loyal to institutions such as the Ottawa School of Art, while those seeking children's activities, are happy with the nearby Hintonburg Community Centre. It is always a challenge to draw students to a new school.

One way to stand out is to offer specialized art facilities. The purchase of a Hollander Beater would make the Studio Café the only arts school in Ottawa-West with fine papermaking facilities, and the second institution in all of Ottawa offering the use of a pulp beater.

While traditional Hollander Beaters run as high as **\$38,000**[1], a new variety of devices have recently become available. The **Oracle** Beater is available in models which cost as little as **\$4,000**[2]. While it is a Hollander Beater which would set the Studio Café apart, other tools are necessary to complete a paper making studio, such as **moulds and deckles** and drying racks. These supplies would cost about **\$1,690.60**[3]. Total expenses would run between **\$ 5,690.60** and **\$ 7,140.60**, depending on what model is purchased. With fair enrollment in papermaking courses (at **\$300 per course with 8-15 students per semester**, see **Table 2**), expenses could be recovered in less than a year.

While many community centres offer art classes which employ kitchen beaters and home-made moulds and deckles, they cannot offer access to a Hollander Beater. As illustrated in **Table 3**, the purchase of an Oracle Beater would substantially increase the Studio's revenue, drawing in over \$20,000 in the second year and helping to meet the high cost of rent in Hintonburg.

## Glossary

**abaca:** A fibre derived from a plant related to the banana, produces very strong light beige pulp [3].

**Curries Art Supplies:** A Canadian art supply store with locations in Toronto and nearby towns. <https://www.currys.com/>

**felts:** Soft sheets of material used to flatten paper and absorb water.

**glory hole:** A furnace, usually round in shape like a drum, with an opening at one end, used to reheat glass to a workable temperature during the blowing process[4].

**Hollander beater:** A machine used to beat paper pulp from **cellulose** rich plant fibres. It is made up of beater wheel, working at a single point along a circular or ovoid water raceway or tub. The beater wheel (often called a drum beater) consists of multiple "blades" mounted on an axle-like shaft, similar in construction to a water wheel. The blades of the wheel rotate to beat the fibre into a pulp **slurry** which is used to create sheets of paper with the help of a **mold and deckle**, or pouring methods [5].

**fibrillated fibres:** Fibres that have been processed (refined) to develop a higher surface area and a branched structure[5]. The entanglement of this branch like structure results in very durable paper or fabric.

**mould and deckle:** A deep frame covered with a screen (the mould), coupled with another removable wooden frame (the deckle). The mold and deckle are held together with the deckle on top and dipped into a tub of slurry. They are then raised straight up depositing a layer of paper pulp on the surface of the screen. The deckle is then set aside and the mould is rolled face down onto a felt, laying out a sheet of pulp, which will be pressed and dried to become paper.

**over-beaten abaca pulp:** Over beaten abaca pulp dries to a tough translucent finish with a high rate of curling and shrinkage making it an interesting medium for sculpture.

**Paperhouse Studio:** A paper making facility located at Artscape Youngplace in Toronto. It offers workshops, studio rentals, paper making supplies and a variety of handmade paper products [6]. <http://paperhousestudio.ca/>

**Paper Wright:** An Ottawa Valley based global paper making supply business providing Canada and the United States with papermaking kits, pulps, fibres, moulds and equipment, pigments, workshops, and bookbinding [3]. <http://paperwright.com/>

**pulp beater:** See **Hollander Beater**

**pulp painting:** An artistic technique in paper making in which cotton linters are processed for four hours in a Hollander. After colouring and sizing the pulp, water is drained off to get a concentrated form of pulp paint. A squirt bottle is filled 2/3 full with water with 2-3 tablespoons of concentrated pulp and diluted formation aid. The squirt

bottle is shaken. The artist paints by squeezing pulp through the tip of the bottle onto a sheet of felt or wet pulp [3].

**Reina Beater:** The Reina beater is a traditional style beater whose design harks back to the paper beaters made in Holland in the 1600's. It is made entirely from non-corrosive materials including, stainless steel, bronze, and brass to help produce archival quality pulp [4]. <http://www.davidreinadesigns.com/beaters/>

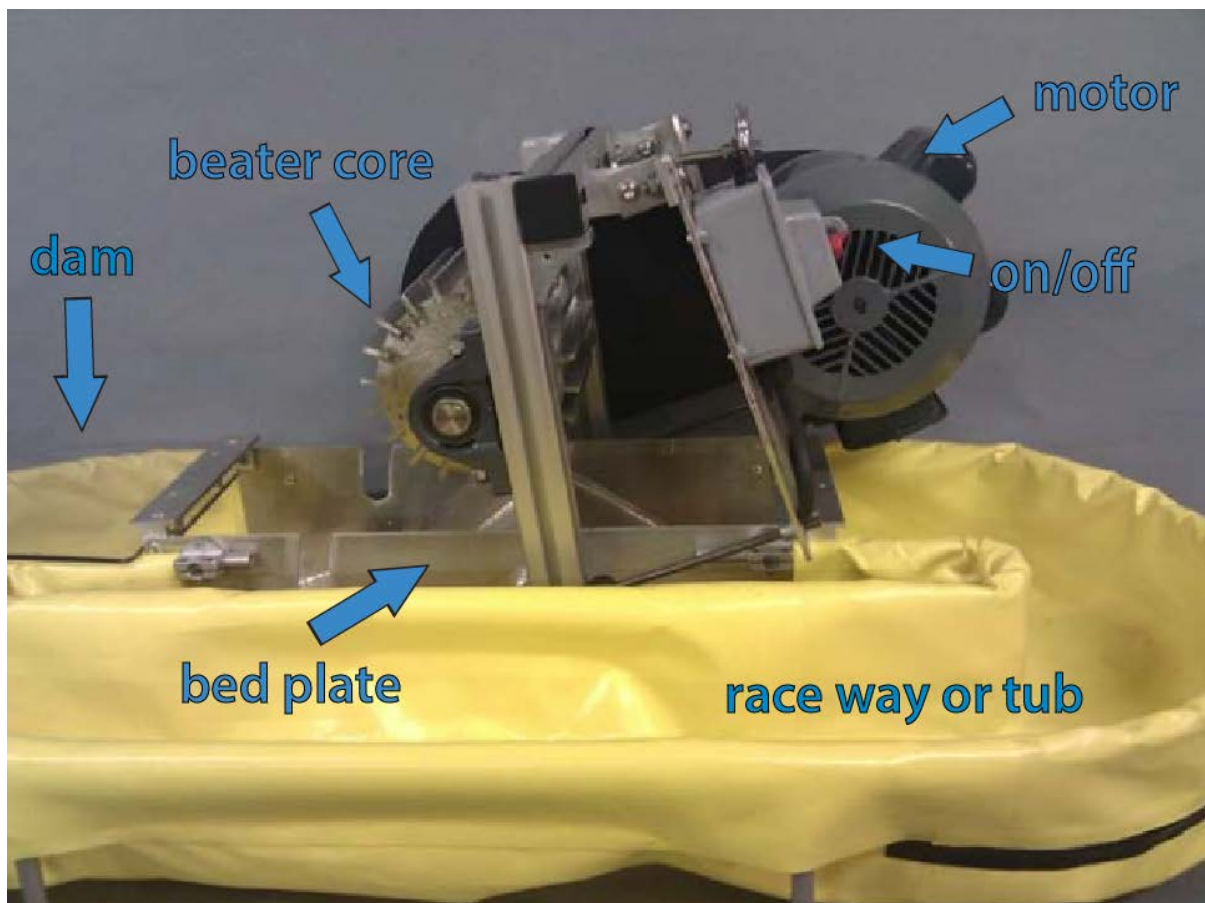
**slurry:** A mixture of pulverized pulp and water used to make paper

## 1.0 Introduction

This proposal recommends the acquisition of a **Hollander Beater** by the Studio Café, Gallery and Workshop. A Hollander Beater would be an excellent addition to the Studio's Café's workshop facilities, giving it the capacity to offer paper making classes alongside its selection of photography, film, water-colour and oil painting workshops.

This proposal will examine the construction of the **Oracle** Beater (as seen below in **Figure 1**) and what makes it a feasible purchase, including its affordability and portability. It will explain how the Oracle will fit nicely into the Studio Café's floor plan and list some additional machines and furniture also necessary to complete a paper making studio.

Finally this proposal will discuss how the Oracle Beater may be used to its best advantage to bring revenue and recognition to the Studio Café. It will provide possible course descriptions and open workshop models. It will also speak about the contributions the Studio Café could make to the Ottawa art community through the addition of this device.



**Figure 1: Oracle Hollander Beater**

## 2.0 Challenges of Drawing Students to a New Art School

The Studio Café is a unique combination of art school, gallery and coffee shop. After a class, students can hang-out in the gallery space and share a coffee and discuss the art. Common spaces such as this are very important to the community will often make the difference of whether people feel welcome in a venue or intimidated.

However, since a coffee shop in the vicinity of the Bridge-Head, isn't likely to draw considerable funds, and gallery spaces are notoriously difficult to support financially, the Studio Café's best chance at economic feasibility, is the courses it offers.

While boasting lovely workspaces, experienced artist-educators and a great location in Hintonburg, the Studio Café is still having difficulty filling its classes. This is likely because serious art students are loyal to institutions such as the Ottawa School of Art (OSA), while hobbyists and those seeking children's activities, are happy with the nearby Hintonburg Community Centre. It is always a challenge to draw students to a new school when they feel their needs are already being met by an established location.

## 3.0 A Way to Stand Out

One way to attract students is offer specialized art facilities. The School of Photographic Arts Ottawa (SPAO) offers a darkroom. Northern Art Glass offers stain glass materials and tools. Flow Glass blowing boasts the only publicly available **glory hole** in the city, and the OSA, the only publicly available Hollander Beater. The uniqueness of the tools these venues provide greatly encourages enrollment in their classes. However, a large city like Ottawa, with a growing interest in the arts, would certainly support other venues with these facilities.

While the Studio Café does not have the right ventilation to house a glory hole, it does have large cement-floored basement equipped with a drain, making it a fine location for a **Hollander Beater**. The purchase of a Hollander Beater would make the Studio Café the only arts school in Ottawa-West with fine papermaking facilities and the second institution in all of Ottawa offering the use of a **pulp beater**. This would surely draw students from the West-End who prefer not to fight traffic in the market.

While traditional Hollander Beaters are heavy devices, which are quite expensive, a new variety of portable devices have recently become available. The **Oracle** Beater is available in models for a fraction of the cost with all necessary accessories [2].

## 4.0 Hollander Beaters

Section four explains in detail the components and functions of a Hollander Beater. It also distinguishes the design of a traditional beater with the new portable and modular beaters available from companies like Oracle.

### 4.1 What is a Hollander Beater?

The **Hollander beater** is a machine used to beat paper pulp from **cellulose** rich plant fibres such as **cotton** and **abaca**. It is made up of beater wheel, working at a single point along a circular or ovoid water raceway or tub. The beater wheel (often called a drum beater) consists of multiple "blades" mounted on an axle-like shaft, similar in construction to a water wheel. The blades of the wheel rotate to beat the fibre into a pulp **slurry** which is used to create sheets of paper with the help of a **mold and deckle**, or pouring methods [5].

The objective of using a beater (rather than some other process like grinding, as wood-pulp mills do) is to create longer, **fibrillated** fibres [5]. It is longer fibres with greater surface area and a branched structure which gives handmade paper its pliable, durable character.

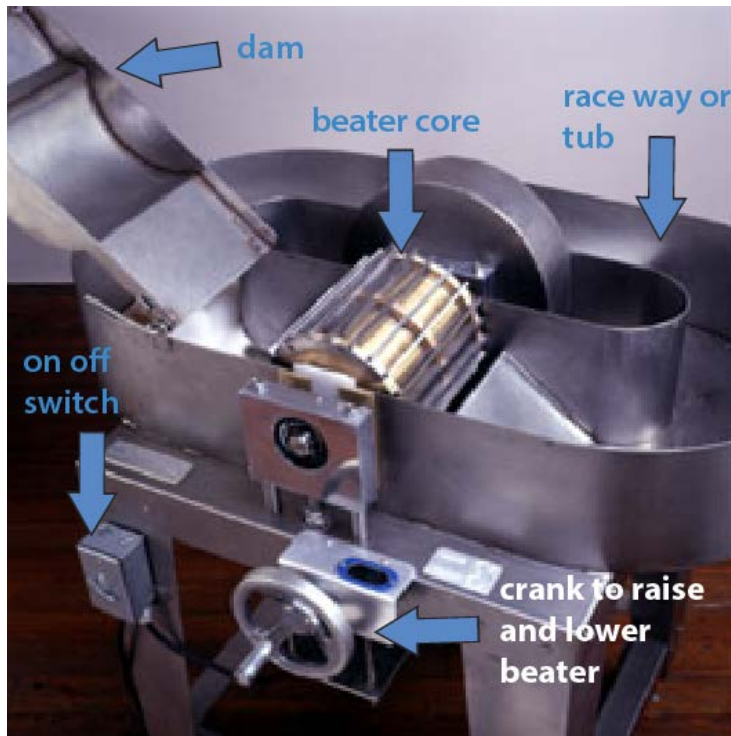


Figure 2: 2-lb Hollander Beater designed by Dave Reina

## 4.2 Affordable Hollander Beaters

Traditional **Hollander Beaters** like the **Reina**, show above, are designed for large studios and production mills. Unfortunately they require a fair amount of space and can cost tens of thousands of dollars.

Recently, however, a new generation of pulp beaters has emerged. Designed for personal studios and educational workshops these beaters can be stored in closets or carried in suitcases onto planes. They can be used in your garage or backyard with a garden hose or utility sink and then stowed away. They are modular in design so they cost much less to ship. Finally gross costs can amount to as little as \$4,000[2].

## 5.0 Costs and Components

This section explains the costs and components of a few different models available from Oracle. It lists and costs other equipment essential for a paper making studio.\*\*\*

### 5.1 Modular Hollander Beaters, Costs and Components

**Table 1** explains the costs and components of **Oracle's** line of Hollander Beaters (see **Figure 1**). As stated above, Oracle offers buyers the option of constructing or purchasing parts of beater locally. Oracle is located in the Northern US making shipping costs reasonable. Model three is the least expensive but would also require the most mechanical expertise to assemble. The prices below are in American dollars [2].

**Table 1: Oracle Beaters, Costs and Components**

Model	Components and Base Price	Necessary Add-ons	Shipping	Total Cost
<b>Oracle Standard Model</b>	Includes: 1/2hp motor and PVC coated polyester fabric tub - \$ <b>4,750</b>	Table or Cart	\$150	<b>\$4,900</b>
<b>Oracle Educational</b>	Includes: Motor, cart, tub and interlocking safety lid (machine only operates when in place) - \$ <b>5,250</b>		\$200	<b>\$5,450</b>
<b>Oracle Beater Core</b>	Includes: Modular core containing all the working components. Motor and electrical components are not supplied - \$ <b>3,000</b>	Motor, Tub, Table or Cart	\$150	<b>\$3,150</b>



Add-ons		Cart with casters <b>\$300.00</b>		
		1/2 hp motor universal motor for 110-220 volt/ 50/60 Hz <b>\$400.00</b>		

## 5.2 Other Supplies for a Paper Studio

While it is a **Hollander Beater** which would set the Studio Café apart from other arts schools and community centres, other tools are necessary to complete a paper making studio. These include:

- **Moulds and deckles**
- **Felts** (J cloths may be substituted for small sheets)
- A **paper press** (two to start)
- A **Drying system** (corrugated card board may be substituted)
- Tubs for mixing **slurry** and water (large buckets may be substituted)
- Drying racks.

Most of these tools are offered by a local company called **The Paper Wright** [3]. Tubs for mixing slurry can be purchased at any hardware store. Large buckets can also be substituted, which are often discarded by cafeterias and restaurants. A simple drying rack is available from **Curries Art Supplies**. Based on prices listed by the companies above the total cost of these items would come to **\$1,690.60**. For a more detailed breakdown please see **Table 4** in **Appendix 1**.

## 5.3 Startup Cost Options

The costs detailed in **Section 6** include necessary equipment, not supplies such as paper pulps. I would suggest rolling the cost of these supplies into a material fee which will be included in the cost of each art course. These costs are explained in **Section 7** which also discusses course options and fees.

The total start-up equipment costs including the tubs and motors necessary for a **Hollander Beater** would run between **\$ 5,690.60** and **\$ 7,140.60** depending on the choice of model. They could be lowered if a more affordable locally sourced component is found. For more details see **Table 5** in **Appendix 2**.

## 6.0 Courses and Studio Rentals

While the costs listed above are certainly higher than that of a few easels and brushes, they could be recouped in less than a year. With a **Hollander Beater** many new courses could be offered by the Studio Café. The paper studio could also be rented by the hour to artists working with paper. The **Paper House Studio** in Toronto is successfully supported by the cost of workshops and rentals in this fashion [6].

### 6.1 Paper Making Courses

I can propose three courses which would put the Hollander beater to good use:

- **Intro to Artist Book Making:** This course would cover basic paper making, traditional book binding, accordion binding and Japanese stab binding.
- **Handmade Paper Art:** This course would explore a variety of techniques in paper making such as, altering the time the pulp is processed in the beater, pressing and air drying, laminating objects between paper plies and **pulp painting**.
- **Paper Relief and Sculpture:** This course would cover, using moulds and embossing to create relief, and using armatures, wax and sewing to create sculpture.

Priced at about **\$300 ten sessions of three hours**, these courses would include a material fee (of **\$50**) which would cover the cost of supplies (Please see **Appendix 3** for **Table 6**, which explains the cost of materials for each student). The rest of the fee would go towards recouping the cost of the Hollander Beater and other capital purchases.

### 6.2 Studio Rentals

Another way of recouping the costs of equipment would be to rent the **Hollander Beater** out to artist working in the medium of paper. If the artists are not graduates of any of the Studio's courses, they would be required to participate in a training session on how to use the beater. The beater could be rented out at a cost of **\$30 an hour for up to four hours sessions**. Artists renting the Beater would purchase their own supplies through the school for a small administrative fee.

## 7.0 Cost Recovery and Revenue Over First Two Years

**Table 2** shows the rate of cost recovery and earnings over the course of year. The highest startup cost option is used from **Table 3**.

The table begins with the spring of 2015, to allow time for the ordering of supplies, studio set up, and the promotion of the courses offered. It is important to order a **Hollander Beater** well in advance of any scheduled use as they take time to construct and ship.

The table reflects the fact that spring and summer courses generally have less enrolment.

The table shows the earnings from overall course registration, with material fees subtracted. It is possible course enrollment would higher, the start-up equipment would not allow for more than about 15 students. The table also shows projected revenue from rentals.

**Table 2: Cost Recovery and Revenue Over First Year**

Semesters	Spring 2015	Summer 2015	Fall 2015	Winter 2016
<b>Course fees at \$250 per student</b>	10 x \$ 250= \$2, 500	8 x \$ 250= \$2,000	15 x \$250= \$ 3,750	15 x \$250= \$ 3,750
<b>Studio Rental</b>	10hrs x \$30= \$ 300	15hrs x \$30= \$ 450	15hrs x \$30= \$ 450	10hrs x \$30= \$ 300
<b>Quarterly Earnings</b>	\$ 2,800	\$ 2,450	\$ 4,200	\$4,050
<b>Deficit Remaining from: \$ 7,140.60</b>	- \$ 4,340.6	- \$ 1,890		
<b>Revenue</b>			<b>\$2,309.40</b>	<b>\$6,359.40</b>

In the following year, more equipment could be purchased, and the class enrollment could be increased. The costs of this additional equipment is reflected in **Table 3** (the number used simply repeats the over-all cost from **Table 4** (which lists tools other than the beater), but they might very well be lower. Notice the very respectable revenue accrued in the second year!

**Table 3: Cost Recovery and Revenue Over Second Year**

Semesters	Spring 2016	Summer 2016	Fall 2016	Winter 2017
<b>Course fees at \$250 per student</b>	20 x \$ 250= \$ 5,000	15 x \$ 250= \$ 3,750	30 x \$250= \$7,500	25 x \$250= \$ 6,250
<b>Studio Rental</b>	15hrs x \$30= \$ 450	20hrs x \$30= \$600	15hrs x \$30= \$450	15hrs x \$30= \$450
<b>Quarterly Earnings</b>	\$ 5,450	\$ 4,350	\$ 7,950	\$ 6,700
<b>Deficit remaining from: \$1,690.60</b>	- \$ 1,690.60			
<b>Revenue</b>	<b>\$3,759.40</b>	<b>\$ 4,350</b>	<b>\$ 7,950</b>	<b>\$ 6,700</b>

## 8.0 The Alternative

While the purchase of a Hollander Beater does involve some expense, without it the Studio Café will continue to struggle to attract students. Without equipment and courses to set it apart, parents and hobbyists are likely to stick with the community centre programs they know and serious art students will make the trip to institutions with professional facilities.

## 9.0 Conclusions and Recommendations

The purchase of a **Hollander Beater** would be an excellent means to draw new students to the Studio Café. While many community centres offer art classes which employ kitchen beaters and home-made **moulds and deckles**, they cannot offer access to a Hollander Beater. Without Hollander Beater silky high grade papers are impossible, not to mention great techniques like **pulp painting** and sculpting with **over beaten abaca pulp**. Both artists and students of other media, and serious paper making artists would flock to the Studio Café for the use of a Hollander Beater. It would be a great contribution to the Ottawa Arts Community particularly the West-End.

The **Oracle** is a reasonably priced Hollander Beater. As made evident in **Table 2** with fair student enrollment it would pay for itself within one year. As illustrated in **Table 3**, it would substantially increase the Studio's revenue in the second year, drawing in over \$20,000, and helping to meet the high cost of rent in Hintonburg.

An Oracle Beater and paper making studio would not be difficult to set up. All the tools and supplies necessary are easy to order. We would simply need to allow time for the beater's construction and shipping.

In summary I would recommend the Studio Café's purchase of an **Oracle Hollander Beater**. For an example of a successful business built around a paper making studio check out the **Paperhouse Studio** in Toronto, which combines workshops, studio rentals and community events [6].

I would also recommend some background research on locally sourced for Beater components such as tables, tubs and motors. Oracles offers several options for different budgets and different degrees of mechanical ability. The tables above are designed to show that even the most expensive option is doable, but with a little of the DIY which artists are famous for, costs could certainly be lowered. It is for this reason I have not quoted just one price.

## References

- [1] D. Reina. Beaters. *David Reina Designs*. [Online]. Available: <http://www.davidreina.com/beaters/>
- [2] L. McDonald. (2014). *The Oracle Hollander Beater*. [Online]. Available: <http://www.peacepaperproject.org/files/oracle.pdf>
- [3] B. Quinlan. *The Paperwright*. (2014). [Online]. Available: <http://paperwright.com/>
- [4] Glass Glory hole. (2014). Fusion Glass Blowing. [Online]. Available: <http://www.fusionglassblowing.com/index.php/Glass-Blowing/Glass-Blowing-Gloryhole.html>
- [5] V. W. Clapp. (1972). Hollander Beater. *Wikipedia*. [Online]. Available: [http://en.wikipedia.org/wiki/Hollander\\_beater](http://en.wikipedia.org/wiki/Hollander_beater)
- [6] *The Paperhouse Studio*. (2014). [Online]. Available: <http://paperhousestudio.ca/>

Cover art by Paper2Roses

## Appendix 1

Table 4: Other Essential Tools for a Paper Making Studio

Device	Recommended Number/Amount	Price	Total Cost
Mould	4 (assorted sizes)	(2) \$ 89.95 + (2) \$ 109.95	\$ 399.80
Deckle	4 (assorted sizes)	(2)\$ 41.95 + (2)\$ 51.95	\$187.80
Paper Press	2 (mini press + small press)	\$ 125.95 +\$ 195.95	\$ 321.45
Drying System			
Tri-Wall Cardboard	4 (25in x 28in)	\$ 10.95	\$ 48.80
Plywood Sheets	2 (25in x 28in)	\$ 49.95	\$ 99
Clamps	4	\$ 18.95	\$ 75.80
Hydraulic Jack 2 Ton Trolley Jack	1	\$ 39.98	
Drying Rack	1	\$357.95 + \$50 shipping	\$ 407.95
Slurry Tubs	6 assorted sizes)		\$ 150
Over All Cost			\$1,690.60

## Appendix 2

Table 5: Startup Cost Options

Hollander Beater	Other Costs	
Oracle Standard Model (Placed on stationary Table or dolly already owned by the Studio Café) <b>\$ 4,900</b>	<b>\$1,690.60</b> As listed in table above	<b>\$ 6,590.60</b>
Oracle Education (Includes Cart, Tub and Motor) <b>\$ 5,450</b>		<b>\$ 7,140.60</b>
Oracle Beater Core with Cart and Motor purchased separately and estimated shipping costs <b>\$ 4,000</b>		<b>\$ 5,690.60</b>

## Appendix 3

The materials fees listed below could be rolled into cost for the paper making courses and ordered with a small mark up by artists who wish to rent the beater. All materials below may be purchased from **the Paper Wright**.

**Table 6: Material Fees**

Material	Per Student	Cost	Total Cost
<b>Felts: Per metre (60" wide - 152 cm)</b>	1 metre	\$ 7.95/m	\$ 7.95
<b>Cotton Linter</b>	2.2 lb.	\$ 12.95	\$ 12.95
<b>Abaca Pulp</b>	2.2 lb.	\$ 19.50	\$ 19.50
<b>Material Fee</b>			\$ 40.40
<b>Material Fee with Administrative top-up</b>			\$ 50

Also Available from **the Paper Wright**: Start up kits which include a pine mould and flush deckle, 20 felts, 250 ml sizing, 1 kg cotton linter, 1/4 kg unbleached abaca pulp, 1/2 kg bleached abaca pulp, 100g of minced flax, 100g of chopped cotton fibres, and samples of various fibres.