

**Subject:** FW: Bid Tabulations: PATH's Acquisition of Ticket Vending Devices No. 17032

**From:** Nubia O'Hare [mailto:NubiaG@ventek-intl.com]  
**Sent:** Monday, July 25, 2011 2:39 PM  
**To:** Brown, Lesley  
**Cc:** Victoria Iacovetto  
**Subject:** Bid Tabulations: PATH's Acquisition of Ticket Vending Devices No. 17032

Good Morning Lesley,

A few years back VenTek International ("VenTek") submitted a proposal to the Port Authority of New York and New Jersey for "Path's Acquisition of Ticket Vending Devices Capable of Dispensing Both Magnetic and SmartCard Media" No. 17032. Would it be possible to get FOIA copies of the following documents with regards to this bid?

- Copies of any/all bid tabulation documents
- Copies of all proposals submitted (minus' VenTek's)
- Any information you can provide with regards to why this project was not awarded to VenTek

Just so you know, VenTek is simply trying to gather as much information as possible to assist us with our approach in future bid proposals. PATH's above project was definitely one that VenTek felt our Automated Pay Station solution fit perfectly with PATH's needs. As you can guess, we were surprised to discover that VenTek was not chosen and we would love to understand where we fell short.

I apologize for the late request; however, if you could provide the above requested information, I would greatly appreciate it.

Regards,

**Nubia O'Hare**  
**Sales Assistant**  
**VenTek International**  
☎: 707-773-3373 7: 707-773-3381  
✉: [Nubiao@ventek-intl.com](mailto:Nubiao@ventek-intl.com)

Daniel D. Duffy  
*FOI Administrator*

June 19, 2012

Ms. Nubia O'Hare  
VenTek International  
1260 Holm Road, Suite A  
Petaluma, CA 94954

Re: Freedom of Information Reference No. 12485

Dear Ms. O'Hare:

This is a response to your July 25, 2011 request, which has been processed under the Port Authority's Freedom of Information Code (the "Code", copy attached) for copies of the bid tabulation and the proposals submitted related to Bid No. 17032 - PATH Acquisition of Ticket Vending Devices Capable of Dispensing Magnetic and SmartCard Media.

Material responsive to your request and available under the Code can be found on the Port Authority's website at <http://www.panynj.gov/corporate-information/foi/12485-C.pdf>. Paper copies of the available records are available upon request.

Certain material responsive to your request is exempt from disclosure pursuant to exemption (1) of the Code.

Please refer to the above FOI reference number in any future correspondence relating to your request.

Very truly yours,



Daniel D. Duffy  
FOI Administrator

Attachment

# Replies to post closing questions



**SUBMITTED BY:**

**OPAL MANUFACTURING LTD  
105 Brisbane Road, #12  
Toronto, Ontario M3B 1R7**

**Vendor #114685**

**To:**



**THE PORT AUTHORITY OF NY & NJ**

**PATH  
One Madison Avenue  
New York, NY 10010**

**Due Date: February 12 2009**

# Replies to post closing questions

We are pleased to respond to the follow up questions as laid out in the letter of Feb 9 2009, as follows:

1. Is cabinet base the same as currently provided?

The base size is identical to the base on the existing PATH machines produced by Opal however the base height is 12 inches shorter than the existing units. This accommodates an intermediate cabinet to house the printer, which was not part of the requirements for the original Opal supplied machines. We specifically approached the design in this way so that if PATH chooses to retrofit the existing machines by adding the printer it can be done by adding the printer cabinet and reduced height pedestal instead of having to replace the whole cabinet which would be a much costlier and more complicated task.

The height of the Bill acceptor and selector buttons on the machine will be the same as on the current machines however the coin insert location will be lowered to comply with the current ADA reach requirement of 48 inches.

2. What is the cabinet replacement cost?

The cost of a replacement cabinet and door, studded and painted is \$1025.00 FOB Opal's dock. However, if the intent of this is to evaluate the cost of adding printers to the existing machines Opal could supply the complete module consisting of the printer cabinet and the pedestal for easy retrofit by PATH. This would eliminate the need to remove any components from the machines.

The cost of these retrofit kits would be \$2230 including the cabinet, printer, pedestal, selector button and all wiring and hardware.

Please see the attached concept drawing of the proposed machine.

3. Will Opal support the Bill Validator, Coin Acceptor and Coin Hopper until 2014?

Both Opal and the manufacturers of these devices will provide support for the units until 2014. Support of new coins and currency as well as supply of parts and replacement units will be handled through Opal.

4. Can the lock be equipped with a secondary locking system. If yes, describe the secondary locking system and cost if any.

We assume that this implies that two key holders, each with a different key would have to be present to open a machine. We can add an additional lock to the machine. Cost is \$195.00 per machine

# Replies to post closing questions

5. What are the proprietary components replacement costs?

Control board	\$325
Expansion board	\$195
Card dispenser	\$261
Hopper board	\$85

6. Does the alarm have a remote alarm capability? If yes, is the remote alarm capability an additional feature or is it part of the device already proposed? If not, is there an additional cost?

The alarms as installed in the machines do have remote reporting capability provided that they are connected to a central server as discussed on page 20 of the proposal as requested in addendum 2.

7. Provide remote access details for transaction logs.

Again, provided that the machines are connected to the central server as described it is possible to log on to the machine and obtain the Transaction logs. The following is a sample transaction log obtained in this way:

```
MIS
>>showmis
Sending MIS report:
Time: 2005/10/11 14:25:59
-----
Machine# 023456      Print# 8
Door Open# 12      MIS Reset# 8
-----
Column      vends      Cash
#1           1           $5
#2           2          $20
#3           0           $0
#4           0           $0
Total        3          $25
unvended:           $0
      1-$5      2-10$      0-20$
-----
Column      vends      Cash
#1          43          $215
#2          12          $120
#3           8          $160
#4          20          $1000
Total       83          $1495
unvended:           $0
      47-$5      30-10$      48-20$
-----
Inventory:
#1(10-9)      #2(10-8)
#3(10-10)     #4(0-10)
-----
>>
```

# Replies to post closing questions

## 8. Printer

a. Where does the receipt drop for patron?

The printer outlet is below the pass outlet door approximately 5 ½ inches below it.

b. Where is the receipt request button?

It will be placed on the on the printer cabinet door.

c. What is the sequence for the patron to request a receipt?

Once a transaction is completed the "Press for Receipt" button will flash and will continue flashing for seven seconds or until the button is pressed or until a bill is inserted for the next transaction.

d. Where is it operating now?

Fordham University use this feature on machines selling passes for their RAM VAN inter campus transportation system.

## 9. How long will power last on the UPS?

On standby, (without doing any transactions) the UPS will provide power to the machine for up to approximately four hours. With constant transactions it will provide power for approximately one hour.

10. "Recommended Spare Parts" letter Q on page 11 of Opal's proposal has only 10% of spare parts but the pricing sheet reflects a cost of 25%. Please explain.

The cost sheet in the RFP required that 25% spare parts be provided for for evaluation purposes so that is what we included in the proposal. Our opinion and experience dictates that a much lower number of spares are recommended for Opal machines and that is what we detailed on page 11.

# Replies to post closing questions

11 Do all the devices meet ADA compliance?

The machines comply with ADA and ABA Accessibility Guidelines<sup>1</sup> which require that:

## **309 Operable Parts**

*309.3 Height. Operable parts shall be placed within one or more of the reach ranges specified in 308.*

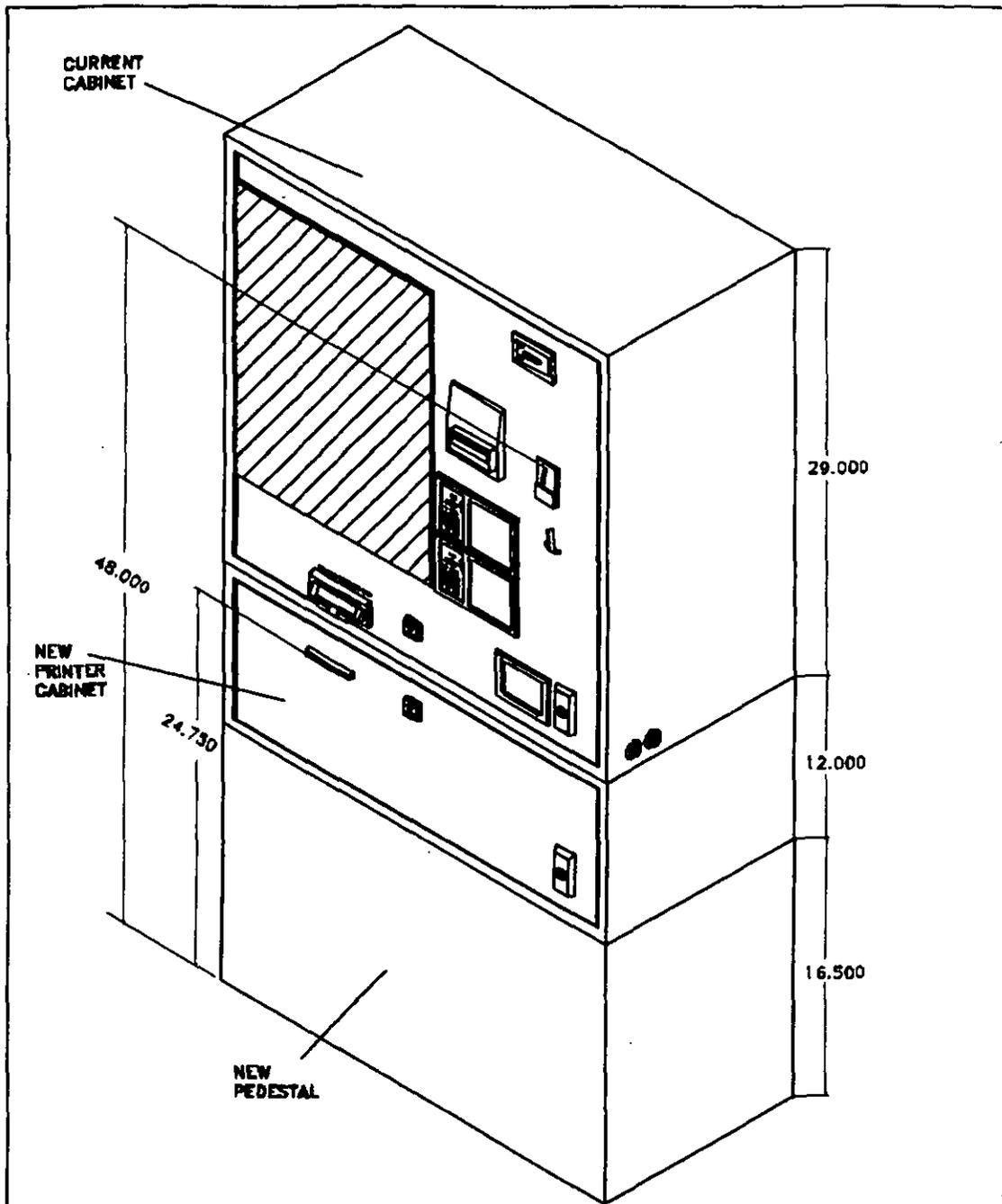
*309.4 Operation. Operable parts shall be operable with one hand and shall not require tight grasping, pinching, or twisting of the wrist. The force required to activate operable parts shall be 5 pounds (22.2 N) maximum.*

**The reach ranges specified are as follows:**

*Where a forward reach is unobstructed, the high forward reach shall be 48 inches (1220 mm) maximum and the low forward reach shall be 15 inches (380 mm) minimum above the finish floor or ground.*

---

<sup>1</sup> **ADA Standards for Transportation Facilities** These standards apply to the construction and alteration of transportation facilities covered by the Americans with Disabilities Act (ADA). They became effective November 29, 2006. The Department of Transportation (DOT) adopted these standards based on updated guidelines issued by the Board.



DIMENSIONS SPECIFIED ALL DIMENSIONS ARE IN MILLIMETERS TOLERANCES ARE AS SHOWN ON THE FACE OF THE DIMENSION UNLESS SHOWN OTHERWISE	SIGNATURE	DATE	OIPAL MANUFACTURING TORONTO, ONTARIO, CANADA
	DESIGNED BY		
	CHECKED BY		
MATERIAL	APPROVED BY		NEW PATH MACHINE VERSION 3
FINISH			DRAWING NO. 02-1081 SCALE: DO NOT SCALE DRAWING SHEET OF



**Response to RFP Solicitation number 17032 including Addendum #1 and Addendum #2  
FOR THE SUPPLY OF TICKET VENDING DEVICES CAPABLE OF DISPENSING BOTH  
MAGNETIC AND SMARTCARD MEDIA**

**SUBMITTED BY:**

**OPAL MANUFACTURING LTD  
105 Brisbane Road, #12  
Toronto, Ontario M3B 1R7**

**Vendor #114685**

**To:**



**THE PORT AUTHORITY OF NY & NJ**

**PATH  
One Madison Avenue  
New York, NY 10010**

**Due Date: January 9 2009**

**THIS RESPONSE CONTAINS THE FOLLOWING DOCUMENTS:**

1. Transmittal Letter
2. Prerequisites
3. Proposal
4. Proposal cost form
5. References form
6. Environmental form
7. Machine Manual
8. QA Procedure
9. Financial Statements
10. Confirmation of incorporation
11. Addendum 1
12. Addendum 2



January 6 2009

The Port Authority of NY & NJ  
Purchasing Services Division  
One Madison Avenue, 7<sup>th</sup> Floor  
New York,  
NY 10010

Letter of Transmittal.

Dear Sir or Madam,

We are pleased to enclose herewith our response to the Port Authority's RFP number 17032 for PATH's acquisition of ticket vending devices. Opal Manufacturing is a manufacturer of vending equipment and kiosks. The company has been designing and manufacturing these products for almost twenty years. Opal machines are in service all over the world including a number of machines in the PATH system

Opal is submitting this proposal on its own as a single entity. Garnet Rich, President of the company is authorized to negotiate and execute a contract on behalf of Opal.

The following individuals can answer questions or address issues that PATH may have with respect to this RFP.

1.) Brian Simon  
General Manager.  
Opal Manufacturing  
416-665-6605  
bsimon@opal.on.ca

2.) Bruce Davis  
Representative  
Opal Manufacturing  
(972) 774-0400  
bdavis@opal.on.ca

Opal manufacturing will not be subcontracting any onsite work with respect to this RFP or consequent contract.

Opal Manufacturing is a corporation , incorporated in the Province of Ontario, Canada. Its sole shareholder is Mr. Garnet Rich, the President and Secretary of the corporation (since September 1989).

Mr. Rich resides at (Ex. 1)

A copy of Opal's Certificate of Incorporation is attached.

Yours truly,

Opal Manufacturing Ltd.

A handwritten signature in black ink, appearing to read "Garnet P. Rich", written in a cursive style.

Garnet P. Rich.  
President.



## **PROPOSER PRE-REQUISITES**

**RELATED TO THE PROPOSAL FOR THE SUPPLY OF TICKET VENDING  
DEVICES CAPABLE OF DISPENSING BOTH MAGNETIC AND SMARTCARD  
MEDIA**

**In response to RFP Solicitation number 17032 including Addendum #1 and  
Addendum #2**

**SUBMITTED BY:**

**OPAL MANUFACTURING LTD  
105 Brisbane Road, #12  
Toronto, Ontario M3B 1R7**

**Vendor #114685**

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**THE PORT AUTHORITY OF NY & NJ**

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One Madison Avenue  
New York, NY 10010**

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## **E. Documentation of Proposer Prerequisites**

A. Opal ticket vending equipment originally installed in 2004 is currently in operation at PATH locations.

### **Frequently Asked Questions**

#### **How do I get a SmartLink Card?**

You may order a SmartLink Card online at [PATHSmartLinkCard.com](http://PATHSmartLinkCard.com), or through the mail by submitting a PATH SmartLink Card Application Form, available from in-station brochure racks or from any Passenger Information Agent.

You may also purchase a pre-loaded 10-trip SmartLink Card from in-station blue dispensers for \$18 (\$13 for trips, plus a \$5 card fee). Dispensers are located at all five PATH terminal stations (33rd Street, World Trade Center, Newark, Hoboken, and Journal Square) as well as Pavonia/Newport and Exchange Place. World Trade Center, 33rd Street, and Journal Square all have an additional dispenser that sells the SmartLink Card with no pre-loaded trips for the \$5 card fee. These dispensers accept CASH ONLY.

Newsstands at PATH terminal stations sell a pre-loaded 20-trip SmartLink Card for \$31 (\$26 for trips, plus a \$5 card fee).

**The machines described in this PATH information sheet were manufactured by  
Opal.**



**Opal machines in operation at the PATH World Trade Center station.**

B Opal has successfully fulfilled a number of contracts for in excess of 16 similar machines in the past two years.

The attached letter from iWireless, a cellular phone service in Iowa, Illinois and Missouri confirms that Opal has successfully completed at least one such contract.



3000 Tramonl Avenue, Suite 300A  
Davenport, Iowa 52807  
Phone: 563.388.3500  
Fax: 563.445.1126  
[www.iwireless.com](http://www.iwireless.com)

1-5-09

To whom it may concern,

This letter confirms that Opal Manufacturing Ltd has completed a contract for the manufacture and supply of 20 vending kiosks for Iowa Wireless LLC dba i wireless within the past two years. The equipment is deployed and working in the field.

Please don't hesitate to contact me if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Scott Ohweiler", written over a horizontal line.

Scott Ohweiler  
Director of Sales  
i wireless

[scott.ohweiler@iwireless.com](mailto:scott.ohweiler@iwireless.com)  
Desk: 563.388.3500 ext. 7870



## **PROPOSAL**

**FOR THE SUPPLY OF TICKET VENDING DEVICES CAPABLE OF  
DISPENSING BOTH MAGNETIC AND SMARTCARD MEDIA**

**In response to RFP Solicitation number 17032 including Addendum #1 and  
Addendum #2**

**SUBMITTED BY:**

**OPAL MANUFACTURING LTD  
105 Brisbane Road, #12  
Toronto, Ontario M3B 1R7**

**Vendor #114685**

**To:**



**THE PORT AUTHORITY OF NY & NJ**

**PATH  
One Madison Avenue  
New York, NY 10010**

**Due Date: January 9 2009**

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## 1. INFORMATION FOR PROPOSERS

RFP Information only.

## 2. PROPOSER PREQUISITES

Included as a separate submission

## 3 FINANCIAL INFORMATION

### A Financial Statements

Financial Statements for the year ended August 31 2008 are attached.

### B Statement of Work on hand

Work on hand or under bid as at December 12 2008				
Type of equipment	Quantity	Deployment location	Approximate contract dollar value	Anticipated completion date
EP100 Top up kiosks	60	Mexico	\$ 500,000	Mar-09
EP 75 Top up kiosks	3	Jamaica	\$ 24,000	Jan-09
EP 75 Top up kiosks	8	Cayman Islands	\$ 56,000	Jan-09
EP 75 Top up kiosks	3	St Lucia	\$ 20,000	Jan-09
EP 75 Top up kiosks	1	Dominica	\$ 80,000	Jan-09
EP 75 Top up kiosks	13	Trinidad	\$ 90,000	Dec-08
Cell phone dispensers	8	Cayman Islands	\$ 20,000	Feb-09
Opal Octo Phone card dispensers	7	Italy	\$ 35,000	Jan-09
Opal Octo Phone card dispensers	13	Holland	\$ 80,000	Jan-09
Payment Kiosks	3	Canada	\$ 60,000	Dec-08

For further information on the above please contact Brian Simon at 416-665-6605 or bsimon@opal.on.ca.

### C Proposer's Banking Information

HSBC Bank Canada  
Skyway Business Park  
170 Attwell Drive, Etobicoke, ON M9W 5Z5  
Canada

Tel: (416) 679-4988

Contact: Cathy Ierullo  
Senior Account Manager, Commercial Financial Services  
Cathy\_ierullo@hsbc.ca

#### **4 EVALUATION CRITERIA AND RANKING**

RFP Information only.

#### **5 RESERVED**

#### **6 CERTIFICATION OF RECYCLED MATERIALS PROVISION**

See Attachment E for completed form.

#### **7 PROPOSAL SUBMISSION REQUIREMENTS**

##### **A. Letter of Transmittal**

Attached on Opal Letterhead.

## **B. Executive Summary**

Opal Manufacturing has been manufacturing vending equipment and kiosks since 1989. Originally a manufacturer of consumer appliances, Opal Manufacturing developed a unique gravity-fed, jam-free vending system for stamp booklet and card vending machines over twenty years ago and secured international patents on this product. Since this time, many tens of thousands of vending machines have been produced and are in service in all parts of the world.

The company has produced 20 Ticket Vending Machines for the Corporation in 2003 and 2004. Specifications for those machines were almost identical to the specification laid out in this RFP. The machines are in service and we understand that they are performing beyond original expectations. The machines utilize the Opal dispenser. This factor, combined with the durability and quality of the machines ensures optimal uptime in the field with minimal service requirements.

Currently, under numerous United States and Canadian patents, the Company designs and manufactures the following:

- Postage stamp booklet vending equipment
- Refrigerated and portion controlled liquid cream dispensing equipment for the fast food industry e.g. McDonalds, Burger King etc.
- Smart Card dispensing and recharging equipment for closed vending environments including card and stamp vending equipment for the US Navy.
- Transit Pass vending machines. Customers include PATH, RTD Denver, Fordham University, Jacksonville Transit Authority.
- Prepaid calling card dispensing equipment
- Prepaid cellular phone dispensing equipment
- E-PIN Vending Machines
- Direct top up machines for prepaid cellular phones.

Machines operating Worldwide today include:

40,000 + postage stamp booklet dispensers  
200 + smart card dispenser/recharge systems  
10,000 + prepaid calling card machines and mobile top up kiosks

The bulk of current installations of Opal vending machines have been in the telephone card vending and stamp booklet vending arenas. Current companies utilizing Opal equipment include: AT&T, Verizon, Thomas Cook, iWireless, Travelex, and American Express.

Opal has shipped machines to over 40 countries worldwide accepting almost as many different currencies.

Opal's equipment carries many International approvals including UL Listing for the USA, CSA for Canada, CE stickered for Europe and the KETI sticker in Korea.

Opal has demonstrated to PATH its ability to manufacture ship and support superior equipment at extremely competitive prices.

The equipment proposed in response to this RFP differs from the 20 machines delivered to PATH in 2003 and 2004 in a few areas. In order to provide PATH with the maximum amount of utility and commonality between equipment delivered under this contract and the earlier machines, Opal will offer to PATH upgrade options to bring these 20 machines up to same configuration as the new machines.

This process may involve shipping of parts which PATH technicians may install, or shipping of complete machines back to Opal for remanufacturing.

Opal has a long history of working with clients to create solutions for unique applications. A wide range of user interfaces ranging from simple push buttons to full function touch screens have been successfully used in recent projects. Similarly, many different options in coin, bill and change making have been used to fulfill client needs.

We look forward to working with PATH in evaluating all available options and providing the best possible solution to PATH personnel and customers.

The success of our company has come from our ability to listen to our clients, understand their needs, and provide cost effective solutions based upon our years of experience and engineering resources. A key concept has been designing durable machines that are energy efficient, require little maintenance and have shown very long service life in the field. Several of our clients have trusted us to provide their vending solutions for over twenty years including upgrades, reprogramming, training and parts support.

We value our relationship with PATH and look forward to continuing to provide high quality vending equipment and support services for many years to come. We look forward to answering any questions related to the equipment offered in this proposal or the services offered by our company.

Thank you for your consideration of our proposal.

### **C. Agreement on Terms of Discussion**

A signed copy of the Agreement on Terms of Discussion (Attachment A) is attached. It has been signed with no amendment.

### **D. Certifications With Respect to the Contractor's Integrity Provisions**

Our signature on the Letter of Transmittal confirms the certifications in the Contractor's Integrity Provisions included in the Standard terms and Conditions of this RFP.

### **E. Documentation of Proposer Prerequisites**

This item is included with this Proposal separately identified as provided for in Addendum #2 to the RFP.

### **F. Proposal**

#### **1. Technical Requirements**

Opal routinely designs, manufactures, tests and supports vending and kiosk equipment deployed in over 40 countries. New designs are fully prototyped and tested before being put into production. The scope and design specs of the equipment required in this RFP are fully within the realm of Opal's field of expertise.

The following is a detailed description of the proposed equipment as specified in the Scope of Work in Attachment B of the RFP.

#### **A. Cabinet**

The cabinet will be manufactured from 14 gg cold rolled steel and will be constructed with welds and folds in the metal designed to maximize the strength at all possible entry points..

The machine will be mounted on a pedestal manufactured from 1/8 inch cold rolled steel plate. The cabinet will be bolted to the pedestal. The pedestal will be capable of being bolted to the floor and the cabinet will be capable of being bolted to a wall.

The cabinet and pedestal will be electrostatic powder coated.

Total machine footprint will be 30" wide x 14.5 " deep x 58 " high.

#### **B. Ticket Dispensers.**

The card dispensers used to vend the cards will be the Opal gravity fed patented units. Each dispenser will be capable of holding 900 10-mil cards or 300 30-mil cards. The dispensers can be used to vend either the 10-mill or the 30-mill card without any adjustment or reconfiguration at all.

### **C. Bill Validators**

The bill validators proposed are the CashCode Model SM back load unit. The unit accepts \$1, \$5, \$10, \$20, \$50 and \$100 US banknotes. The device has a 1.7 second acceptance time and a 96% acceptance rate on first bill insertion. These units have been in use in PATH machines since 2004 and have proved to be fast, accurate and extremely resilient. Software upgrades to accommodate new issues of banknotes are achieved by changing a memory chip (removable memory stick) in the validator, a two minute operation.

The validator is equipped with a 1000 bill capacity metal lockable removable bill cassette.

The device will accept banknotes in all four insertion directions.

The SM is a standard product manufactured by CashCode. It is available as a stock item as are spare parts. CashCode has committed to support this product through 2013

### **D. Coin Acceptors**

The coin acceptors proposed are the MEI Cashflow 9500 units. The coin acceptor can be configured to validate all or some US coins including \$.05, \$.10, \$.25, and \$1.00 coins inserted in any configuration.

The Cashflow 9500 standard product manufactured by MEI. It is available as a stock item as are spare parts. MEI has committed to support this product through 2013.

### **E. Coin Hoppers**

Money Controls Universal Hoppers will be utilized. Capacity of these units is 1600 US quarters or 1200 US dollar coins. These units have been used by PATH since 2004 and have demonstrated their ease of use and reliability.

The Universal Hopper is a standard product manufactured by Money Controls. It is available as a stock item as are spare parts. Money controls has committed to support this product through 2013.

### **F. Heater**

The machines will be equipped with a thermostat controlled heating device designed to maintain the temperature inside the cabinet within the operating temperature range of the machine's components.

### **G. Lock**

The machines will be equipped with a forged stainless steel, vending style, high security T handle lock. The doors will be equipped with three point locking mechanisms. The lock cylinders will be TuBar high security locks that utilize two parallel rows of four pins and two sidebars per side. The cylinders are changeable in the event that the PATH revenue department needs to change keys.

### **H. Alarm**

The machines will be equipped with battery backed security alarm systems that will be triggered by unauthorized door opening, excessive vibration or tilting of the machine beyond 15 degrees. The alarm will sound a 125dB siren for 30 seconds after which it will automatically shut off if the door is closed or if the condition that caused the alarm no longer exists. The alarm will be enabled or shut off by means of a key.

### **I. Graphic Display Panel**

The machines will be equipped with a six digit LED panel. The panel will display the value of cash inserted, product prices, (when the appropriate product selection button is pressed) and an out of service message that is manually settable by PATH personnel.

### **J. Transaction Logs**

The device will log all transactions including details of bills inserted, coin inserted, coins dispensed, and sales by product type. The transaction log will include a re-settable service log and a cumulative non-re-settable log. The re-settable log is cleared after each revenue servicing; the machine historical totals will be continuously updated to the cumulative non-re-settable log. Each log shall be printable via a selectable function in the service mode of the machine. Cumulative logs shall keep all revenue information permanently and the service logs will contain the data for each service call.

### **K. Printer**

A printer will be provided to provide on-demand printing sales receipts. A button will be provided on the machine to enable the customer to request a receipt. The same printer will be used to print service reports when the machines are revenue serviced. We will utilize a Citizen PPU 231-1 printer. The unit is a thermal receipt printer configured to print 80 mm (3 1/8") wide receipts. Citizen have confirmed that they will support this printer into 2013.

**L. UPS**

The equipment will include a built-in UPS that will allow the equipment to complete a patron transaction in progress in the event of a power disruption. The UPS will act as a surge suppressor and line filter for the AC power supply.

**M. Power**

The equipment will require 110-120VAC mains power on circuits isolated from any other type of equipment.

**N. Cancel/Timeout Transaction**

The equipment will be configured to enable the patron to cancel a transaction at any time prior to the satisfaction of the full price and if monies have been deposited, to return credited funds in the form of dollar coins and quarters. A Cancel button will be mounted on the equipment for this purpose. A user configurable settable and modifiable timeout feature will also return deposited monies to return funds if the user fails to select a product within the configured elapsed time after the price has been deposited. The latter functionality will only apply in non auto-vend configurations. This feature can be disabled by PATH.

**O. Reserved**

**P. Reserved**

**Q. Recommended Spare Parts**

The following is a list of spare parts that Opal recommends PATH keep on hand to support 30 machines.

<b>Device</b>	<b>Quantity</b>
Ticket Dispenser	3
Bill Validator	3
Coin acceptor	3
Coin hopper	3
Control board	3
Alarm module	3
Heater	3
Lock	0
Lock cylinder	3
Graphic display panel	3
Printer	3
Selection buttons	8
UPS	1
Alarm battery pack	3

#### **R. Equipment Manuals**

A copy of the manual for the existing machines (without the customer accessible printer) is attached. Manuals would be provided in hard copy or in electronic form as required.

#### **S. Reserved**

#### **T. Authority Acceptance**

The Authority Acceptance as described in the RFP documents appears to imply that if equipment is not installed until 90 days after delivery, and payment is not authorized until after 30 days of live operation, then payment will not be submitted to vendor up to 120 days after delivery. This potential time schedule for payment does have cost ramifications to our company as well as other potential vendors. We propose that acceptance shall be contingent upon 15 days of live operation or 30 days after delivery, whichever is sooner and that warranty shall start at time of delivery. Delivery is deemed to take place once the goods are delivered to PATH at the agreed delivery address). Opal cannot control installation times as this is not within the scope of their duties within this contract.

#### **U. Training, Documentation, Manuals & Expert Technical Assistance**

Opal personnel can be made available to provide training at PATH's location if required. The cost of this training is shown on Attachment C, the Cost Proposal Form.

#### **V. Project Schedule**

Upon acceptance of the contract Opal will provide, on request, a detailed project schedule. It is anticipated that the first batch of ten machines will be ready for shipment from Opal within 80 days of acceptance by Opal of the order. The balance of the machines can be available one week later and shipping dates are to be as agreed between PATH and Opal provided that the final twenty machines shall be delivered no later than 21 days after the delivery of the first ten machines.

**W. A.D.A. Compliance**

The equipment will be designed such that all controls and operating mechanisms will be at a height of less than 54" off the ground. In addition, the design of the face of the machine will allow for affixing brail labeling.

**X. Delivery**

The price includes delivery of the equipment and spares to a truck level loading dock or sidewalk at a PATH location in the Jersey City area in New Jersey. The machines will be shipped in three batches of ten machines each.

**Y. Title**

Title to all equipment, manuals and spare parts shall vest with PATH only once all equipment contemplated by the contract has been paid for in full.

**ATTACHMENT C - COST PROPOSAL FORM**

**PROPOSER NAME** Opal Manufacturing Ltd.

DESCRIPTION	Est. QTY		Per unit cost		TOTAL EST. COST
<b>(A) Ticket Dispensing Machines Purchase, Delivery &amp; Warrantee</b>					
Fully loaded per unit price as per specification	30	X	\$ 10876	=	\$ 326 280

NOTE: Price shall be all-inclusive including all required misc. / ancillary parts for complete installation, shipping, delivery and warrantee requirements consistent with specs contained herein.

DESCRIPTION	Est. QTY		Per Day cost		TOTAL EST. COST
<b>(B) ADDITIONAL TRAINING IF NEEDED - (OPTIONAL)</b>					
Onsite End-User Training including all Training materials, travel & expenses	5 days	X	\$ 1200	=	\$ 6000

DESCRIPTION	Est. QTY in hrs		Per hour cost		EST. TOTAL COST
<b>(C) ADDITIONAL (POST INSTALLATION) TECHNICAL SUPPORT IF NEEDED (OPTIONAL)</b>					
Remote - Jr. Technician / Engineer	50 hrs.	X	\$ 0	=	\$ 0
Remote - Sr Technician / Engineer	25 hrs	X	\$ 0	=	\$ 0
Onsite Jr. Technician / Engineer	50 hrs.	X	\$ 125	=	\$ 6250
Onsite Sr Technician / Engineer	25 hrs	X	\$ 175	=	\$ 4375
<b>(C) TOTAL</b>					10 625

For Onsite personnel, hourly rate shall be all-inclusive of all travel and expenses.

DESCRIPTION	EST QTY of UNITS		UNIT COST PER DEVICE				EST. TOTAL COST
<b>(D) SPARE PARTS</b>							
See Attached List	30	x	\$3157	x	0.25	=	\$ 23679
	30	x	\$	x	0.25	=	\$
	30	x	\$	x	0.25	=	\$
	30	x	\$	x	0.25	=	\$
	30	x	\$	x	0.25	=	\$
<b>(D) TOTAL Spare Parts COST</b>							<b>\$23678</b>

Note – Historically, and for proposal evaluation, PATH anticipates 25% spare parts utilization. However, this figure is estimated and for evaluation purposes only

NOTE: All quantities set forth in these pricing sheets are estimated and for evaluation purposes only. Contractor will be compensated only for actual quantities provided.

**Estimated TOTAL Cost**

Purchase / Delivery / Warrantee (A)	\$ 326 280
Optional Incremental Training (B)	\$ 6000
Total Optional Technical Support (C)	\$ 10625
Total Spare Parts (D)	\$23678
<b>ESTIMATED TOTAL</b>	<b>\$ 366 583</b>

**ATTACHMENT D- PROPOSER REFERENCE FORM**

Name of Proposer: Opal Manufacturing Ltd

Please provide a list of references on the firm's performance of similar work within the last five years, including all current contracts. Use additional sheets as necessary.

Include the following information for each reference:

Customer Name: Regional Transportation District, Denver  
Address: 1600 Blake Street, Denver, Co. 80202  
Contact Name and Title: Don K Young  
Phone and Fax Numbers of Contact: 303-299-4042  
Contract date(s): December 2006  
Contract cost: \$103k  
Description of work:  
Opal built pass dispensers and custom Ride Ticket Booklet dispensers for  
RTD

Customer Name: Travelex Currency Services Inc  
Address: \_\_\_\_\_  
Contact Name and Title: Denise Egan, Relationship Coordinator  
Phone and Fax Numbers of Contact: 216-221-2176 Fax 866-470-2689  
Contract date(s): Various  
Contract cost: Over \$500k  
Description of Work:  
Travelex deploys Opal card vending machines in major airports  
world wide, including the three New York area airports.

Customer Name: Seamobile  
Address: 3044 N. Commerce Parkway Miramar, FI 33025  
Contact Name and Title: Alba Young Purchasing Supervisor  
Phone and Fax Numbers of Contact: +954-538-4116 Fx: +954-538-4094  
Contract date (s): Various -  
Contract cost: Over \$500k  
Description of work: Card vending machines deployed aboard ships worldwide

## ATTACHMENT E - CERTIFIED ENVIRONMENTALLY PREFERABLE PRODUCTS/PRACTICES

**Bidder/Proposer Name:** Opal Manufacturing Ltd  
**Date:** December 12 2008

In line with PATH's efforts to promote products and practices which reduce our impact on the environment and human health, Bidders/Proposers are encouraged to provide information regarding their environmentally preferable/sustainable business practices as they relate to this contract wherever possible. Bidders/Proposers **must** complete this form and submit it with their response, if appropriate. Bidders/Proposers **must** submit appropriate documentation to support the items for which the Bidder/Proposer indicates a "Yes" and present this documentation in the proper sequence of this Attachment.

### 1. Packaging

Has the Bidder/Proposer implemented any of the following environmental initiatives? (A **checkmark** indicates "Yes")

- Use of corrugated materials that exceed the EPA recommended post-consumer recycled content
- Use of other packaging materials that contain recycled content and are recyclable in most local programs
- Promotes waste prevention and source reduction by reducing the extent of the packaging and/or offering packaging take-back services, or shipping carton return
- Reduces or eliminates materials which have been bleached with chlorine or chlorine derivatives
- Eliminates any packaging that may contain polyvinyl chloride (PVC), or polystyrene or heavy metals

**If yes, a description of the practices being followed must be included with the submission.**

### 2. Business Practices / Operations / Manufacturing

Does the Bidder/Proposer engage in practices that serve to reduce or minimize an impact to the environment, including, but not necessarily limited to, the following items? (A **checkmark** indicates "Yes")

- Recycles materials in the warehouse or other operations
- Use of alternative fuel vehicles or vehicles equipped with diesel emission control devices for delivery or transportation purposes
- Use of energy efficient office equipment or signage or the incorporation of green building design elements
- Use of recycled paper (that meets federal specifications) in their marketing and/or resource materials
- Other sustainable initiative

**If yes, a description of the practices being followed must be included with the submission.**

### 3. Training and Education

Does the Bidder/Proposer conduct/offer a program to train or inform customers and employees of the environmental benefits of the products to be offered under this contract, and/or does the Bidder/Proposer conduct environmental training of its own staff?

Yes  No If yes, Bidder/Proposer must attach a description of the training offered and the specific criteria targeted by the training.

**4. Certifications**

Has the Bidder/Proposer or any of its manufacturers and/or subcontractors obtained any of the following product / industry certifications? (A checkmark indicates "Yes")

- ISO 14000 or adopted some other equivalent environmental management system
- Other industry environmental standards (where applicable), such as the CERES principles, LEED Certification, C2C Protocol, Responsible Care Codes of Practice or other similar standards
- Third Party product certifications such as Green Seal, Scientific Certification Systems, Smartwood, etc.

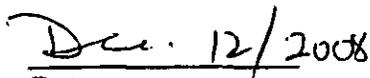
**If yes, Bidders/Proposers must attach copies of the certificates obtained.**

**5. Other Environmental Criteria**

Bidders/Proposers are encouraged to respond to criteria specifically indicated in this Bid/RFP as "Management Approach" (and attach the appropriate documentation) to receive consideration in the evaluation.

I hereby certify, under penalty of the law that the above statements are true and correct.

  
Name

  
Date

Yes  No If yes, Bidder/Proposer must attach a description of the training offered and the specific criteria targeted by the training.

**4. Certifications**

Has the Bidder/Proposer or any of its manufacturers and/or subcontractors obtained any of the following product / industry certifications? (A checkmark indicates "Yes")

- ISO 14000 or adopted some other equivalent environmental management system
- Other industry environmental standards (where applicable), such as the CERES principles, LEED Certification, C2C Protocol, Responsible Care Codes of Practice or other similar standards
- Third Party product certifications such as Green Seal, Scientific Certification Systems, Smartwood, etc.

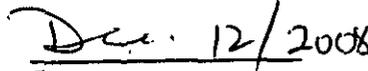
**If yes, Bidders/Proposers must attach copies of the certificates obtained.**

**5. Other Environmental Criteria**

Bidders/Proposers are encouraged to respond to criteria specifically indicated in this Bid/RFP as "Management Approach" (and attach the appropriate documentation) to receive consideration in the evaluation.

I hereby certify, under penalty of the law that the above statements are true and correct.

  
Name

  
Date

**ATTACHMENT C - COST PROPOSAL FORM**

**PROPOSER NAME** Opal Manufacturing Ltd.

DESCRIPTION	Est. QTY		Per unit cost		TOTAL EST. COST
<b>(A) Ticket Dispensing Machines Purchase, Delivery &amp; Warrantee</b>					
Fully loaded per unit price as per specification.	30	X	\$ 10876	=	\$ 326 280

NOTE: Price shall be all-inclusive including all required misc. / ancillary parts for complete installation, shipping, delivery and warrantee requirements consistent with specs contained herein.

DESCRIPTION	Est. QTY		Per Day cost		TOTAL EST. COST
<b>(B) ADDITIONAL TRAINING IF NEEDED - (OPTIONAL)</b>					
Onsite End-User Training including all Training materials, travel & expenses	5 days	X	\$ 1200	=	\$6000

DESCRIPTION	Est. QTY in hrs		Per hour cost		EST. TOTAL COST
<b>(C) ADDITIONAL (POST INSTALLATION) TECHNICAL SUPPORT IF NEEDED (OPTIONAL)</b>					
Remote - Jr. Technician / Engineer	50 hrs.	X	\$ 0	=	\$ 0
Remote - Sr Technician / Engineer	25 hrs	X	\$ 0	=	\$ 0
Onsite Jr. Technician / Engineer	50 hrs.	X	\$ 125	=	\$ 6250
Onsite Sr Technician / Engineer	25 hrs	X	\$ 175	=	\$ 4375
<b>(C) TOTAL</b>					<b>10 625</b>

For Onsite personnel, hourly rate shall be all-inclusive of all travel and expenses.

**Addendum to: ATTACHMENT E – CERTIFIED ENVIRONMENTALLY  
PREFERABLE PRODUCTS/PRACTICES.**

**1. Packaging**

Opal uses recyclable corrugated cardboard and reusable wood skids in all of its packaging.

None of Opal's packaging materials utilize bleached materials.

**2. Business Practices / Operations / Manufacturing**

95 % of all waste materials used and discarded at Opal Manufacturing is recycled after use:

- Cardboard packaging is sold for recycling.
- Metal scrap is segregated and sold to recyclers
- All waste paper is segregated and sold to recyclers
- All plastic and glass bottles are sold to recyclers.
- All scrap electronic components are sold for recycling or are disposed of in an environmentally friendly way.

## Component Classifications

The following table describes the classification of each component within the parameters set out in the RFP:

Device	Meets the requirement straight out of box (COTS) with no configuration changes required	Meets the requirements via user configuration	Meets the requirements via special build / unique customization or other type of modification	Component Notes
Cabinet			X	Cabinet will be customized for from standard design
Ticket Dispenser	X			Dispenser is manufactured by Opal (COTS)
Bill Validator	X			
Coin acceptor	X			
Coin hopper	X			
Control board		X		Control Board (COTS) will be programmed for PATH
Alarm module	X			
Heater	X			
Lock	X			
Lock cylinder	X			Locks can be keyed the same as existing machines
Graphic display panel	X			
Printer	X			
Selection buttons	X			
UPS	X			

### Firmware:

The machines will utilize the Opal Vending Controller to control the operation of the equipment and create and print the required logs. The controller is a microprocessor board utilizing a Motorola Coldfire processor. It has been in use on Opal equipment for over five years. Firmware for the device is proprietary to Opal and has been developed specifically for this type of machine. The firmware on the proposed machines will be the same as what PATH is currently using with a modification to enable printing of receipts when requested by the customer.

### ***Operational Specifications:***

- Power: 110/120v 60 Cycles max. draw 3 amps.
- Dimensions 30 " wide x 58 " high x 14.5 " deep
- Weight Approximately
  
- Operating temperature range 0° C to 50° C
- Receipt paper 80 mm wide, 2.1 to 2.5 mils thick
- Card dispenser capacities 300 30 mil to 900 10 mil cards

### ***Manuals***

A copy of the manual for the existing machines (without the customer accessible printer) is attached. Manuals would be provided in hard copy or in electronic form as required.

### ***Testing***

Each machine will be fully tested and qualified using standardized tests prior to being shipped from the Opal plant. All components are tested and a written record is kept indicating the test results. All equipment, including dispenser, printers, money handling devices etc. have to pass its relevant testing before being released for shipment.

A copy of the Opal test recording document is attached.

## ***Training***

Given that PATH is already operating a number of Opal Ticket Vending machines, the training that would be required to familiarize PATH personnel would be minimal unless training was required for personnel with no familiarity with the equipment. Current operational personnel would likely only require instruction on the operation and maintenance of the receipt printer.

On site training would take one day per group of up to ten technicians. It would consist of hands on training in a classroom environment utilizing a live machine.

The training agenda would consist of the following:

1. Ticket vending machine description – What are the parts and what do they do?
  - Selector buttons
  - Card dispensers
  - LCD Interface
  - Coin acceptor
  - Bill Validator
  - Coin hopper
  - Printer
  - Control board
  - Cancel and print option buttons
2. Review each component with respect to:
  - Set up
  - Testing
  - Connections
  - Trouble shooting
3. Circuit diagram showing power and data flow
4. Harness list
5. Configuration and Operation
  - Theory of application. i.e. How does the machine work
  - Using the set up buttons
  - Configuration parameters
  - Troubleshooting / testing
6. Preventative maintenance
7. How to change graphic panels

## **Warranty**

Opal's warranty reads as follows:

All OPAL MANUFACTURING Vending Machines and Kiosks are thoroughly inspected and tested before leaving the factory. OPAL MANUFACTURING warrants the equipment against defects in material and workmanship under normal use and service for one year from the original date of purchase. OPAL MANUFACTURING, at its option, shall repair or replace defective components covered by this warranty.

Should the equipment fail during the Warranty Period, please contact OPAL MANUFACTURING Service & Support at (416) 665-6605 Extension 242 for telephone support. If we determine that a part is needed to repair the machine or to troubleshoot the problem we will ship the part overnight to the customer and guide them through the installation once they receive it.

Where the part in question is a major item, we will request that the faulty item be returned to OPAL MANUFACTURING, freight prepaid, within 30 days. If this is not done the customer will be charged for the replacement part.

In order to keep this warranty in effect, the product must have been handled and used in a manner for which it was designed. This warranty does not cover any damage due to accident, misuse, abuse, or negligence.

Repair or replacement, as provided under this warranty, is your exclusive remedy. OPAL MANUFACTURING shall not be liable for any incidental or consequential damages. Implied warranties of fitness for a particular purpose on this product are limited in duration to the duration of this warranty.

### **Spare parts**

- Parts can be shipped within 24 hours of receipt of request. Overnight FedEx service is available from Opal to PATH.

**Consumables:** Receipt paper. The paper required for these printers is commercially available off the shelf. If required, Opal can recommend sources of supply for PATH.

### **Component turn around time.**

Standard turn around time for any component requiring repair or replacement is two to five working days. Parts can be shipped to and from PATH overnight using FedEx.

### ***Security validation software.***

The validators that Opal is proposing to use in these machines are the same as the CashCode SM units currently being utilized on the Opal machines at PATH. These validators use auto-calibrating and auto-tuning sensors. This eliminates the possibility of validation being compromised by the sensors "wandering" out of spec. The units utilize optical, inductive and dielectric sensors, optimizing validation rates.

CashCode routinely updates the validation software when new bills are issued by the US Treasury.

CashCode has indicated that they intend supporting this product in the US market beyond the next five years. This support includes maintaining inventory of spare parts, provision of service and repair and ongoing software programming to accommodate any new bills issued.

There is no computer running an operating system in the equipment. Consequently the machine is not susceptible to virus threats.

### ***ADA Compliance***

The equipment will be designed such that all controls and operating mechanisms will be at a height of less than 54" off the ground. In addition, the design of the face of the machine will allow for affixing brail labeling.

### ***Vandalism protection.***

- The equipment will be manufactured from 14 gauge steel, electro-statically powder coated. The coating is far tougher than conventional paint and is unaffected by solvents such as acetone, thinners, and most graffiti removal products.
- The graphic cover is a polycarbonate product with silicone coating for extra protection against scratching.
- The door locks clamp the door in three different positions and the locking handle and cylinder are rated as high security.

## ***Transaction time.***

### **Transaction times**

Insert bill, select product, ticket vended	6 seconds
Insert bill, select product, ticket vended, change dispensed	8 seconds
Insert bill, cancel transaction, cash dispensed	5 seconds

Note: These times are contingent upon the customer selecting the product or cancelling the transaction within one second of the value of the cash inserted appearing on the display.

## ***Service Levels***

- Telephone support is available on Monday to Friday during business hours.
- Emergency telephone support is available outside of business hours within four hours.
- Parts can be shipped within 24 hours of receipt of request. Overnight FedEx service is available from Opal to PATH.

## ***Back Shop Repairs***

Parts returned to Opal for repair/service will be repaired within ten business days of receipt. Repairs carry a 90 day warranty.

## ***Security, upgrade and update technical support.***

- Banknote upgrades are generally available as soon as the bills are released into distribution.
- Security issue will be responded to within one business day.

## ***Warranty***

As stated above, Opal provides a one year warranty on all equipment including the operational firmware.

## **Report Generation Functionality (As requested in ADDENDUM #2)**

The machines are to be configured to allow connection by a central server. Opal will provide the server and a software application that will enable the server to poll each machine on a scheduled or demand basis, download inventory, sales and cash balance information and make the data available in a database to allow for indexed data storage and the generation of reports.

Communications to the machines from the server is to be via IP within a LAN or Virtual Private Network where each machine is capable of being allocated a fixed IP address within that network. For machines situated in locations where the LAN access is not practical, landline dialup can be used.

### **Cost**

Costs are as set out in Attachment C. the Cost Proposal.

### **Company Experience**

Opal has been manufacturing the type of equipment described in this proposal for almost 20 years. The dispenser mechanism being used was originally developed for use by the USPS for dispensing stamp booklets and over 40 000 units have been successfully deployed. The same mechanism is in use in over thousands of phone card and cellular top up vending machines world wide. The design, manufacture and support of this type of equipment is the core of Opal's competency.

Opal has managed and completed 2 other similar contracts for PATH in previous years. All were delivered on time, accepted and have been deployed, with excellent field results. In addition, Opal has completed customized Pass dispensing solutions for the Denver Transportation Authority (RTD Denver), Jacksonville Transportation Authority, Fordham University's Ram Van Transit department as well as Academy Bus in New Jersey.

These were completed on time and with excellent field results after installation and were all completed by Opal utilizing the same staff and infrastructure proposed to complete this (RFP)/ contract.

## ***Customer References***

- **The Regional Transportation District (RTD).** RTD is the primary mass transit provider to a population of over 2 600 000 in Denver, Colorado.
  
- **Travelex Group** - Travelex is the largest prepaid phone card provider in airports as well as the primary provider of vending services for all of the largest long distance and local telephone companies. They service all three major New York airports using Opal equipment.
  
- **Maritime Telecommunications Network, division of SeaMobile.** - SeaMobile is the dominant provider of satellite communications to ships at sea. MTN has been using Opal card vending machines on board ships to distribute cards to enable telephone use and internet access to both passengers and crew while at sea.
  
- In addition, **PATH** already has a number of Opal ticket vending machines in operation.

**Contact details for the references are provided on Attachment D – PROPOSER REFERENCE FORM**

## ***Management Plan***

We fully recognize the urgency of this procurement and we stand ready to mobilize our company and suppliers on a schedule that will result in delivery to PATH of fully functioning machines on a timely schedule.

In keeping with the desired 90 day delivery target, we have assembled a draft project schedule that can be accomplished once a firm decision has been made on important technical and design issues.

Opal typically works within tight schedule constraints for private industry clients and a 90 day turnaround is normal. The excellent cooperation and assistance from PATH personnel we have received in past projects has been a key reason for our ability to deliver on a timely basis and we look forward to working again with PATH.

Notice to Proceed	
Review of project deliverables with PATH project manager and review of technical design for vending equipment	NTP +10
Approval of design by PATH and release to manufacturing	NTP +15
Develop final Bill of Materials	NTP +20
Prepare any necessary additional engineering drawing	NTP +20
Placing of final component orders with component suppliers	NTP +45
Placing of raw material orders with Opal suppliers	
Commencement of Manufacturing at Opal	
Final Assembly of Ticket Vending Equipment	NTP +60
Testing of Ticket Vending Equipment	NTP +70
Shipping of Equipment and Spare Parts (Three shipping dates per PATH RFP)	NTP +90

The following personnel would be responsible for the functionality indicated.

Project Manager	Brian Simon
Support and Training Personnel	Michael Mohamed
Warranty Management	Ilyne Reyes

### ***Background and Integrity Checks***

Opal Manufacturing has been fortunate to have chosen an excellent staff of long term employees to serve key roles within the company. When openings occur within the organization, concise job descriptions are written and the interview process is designed around finding individuals with the education, skill set, experience, and integrity qualities required for the opening.

Because Opal deals with vending equipment that accepts cash and electronic payments, special care is taken to screen all applicants for anything in their backgrounds that would give cause for any concern to the company or our customers. Reference checks are made on all prior employers and any gaps in employment are noted and reasons for which are noted in the background check process.

Complete employee files are maintained according to Canadian law. If, for any reason, a customer has any reason to request information on the background of any

Opal employee, such information can be made available to the extent possible under various governmental privacy acts. As importantly, if PATH has any concern about the integrity or performance of any Opal employee, Opal requests that these concerns be conveyed immediately to the company so that a solution may be found.

As a final note regarding Background checks, Opal notes that this project does not include on-site work that would be performed by Opal employees. The only exception could be training of PATH employees. The Opal employees assigned to a training course would be individuals who have previously visited PATH and conducted engineering review work and training.



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 Ministry of  
 Consumer and  
 Commercial  
 Relations

**CERTIFICATE**  
 This is to certify that these  
 articles are effective on

Ministère de  
 la Consommation  
 et du Commerce  
**CERTIFICAT**  
 Ceci certifie que les présents  
 statuts entrent en vigueur le

Ontario Corporation Number  
 Numéro de la société en Ontario

854520

**JULY 10 JUILLET, 1997**

*em D. Liu*

Director / Directeur  
 Business Corporations Act / Loi de sur les compagnies

**ARTICLES OF AMENDMENT  
 STATUTS DE MODIFICATION**

Form 3  
 Business  
 Corporations  
 Act

Formule 3  
 Loi sur les  
 sociétés par  
 actions

1. The name of the corporation is: Dénomination sociale de la société:

O	P	A	L	M	A	N	U	F	A	C	T	U	R	I	N	G	(	1	9	8	9	)	L	T	D

2. The name of the corporation is changed to (if applicable): Nouvelle dénomination sociale de la société (s'il y a lieu):

O	P	A	L	M	A	N	U	F	A	C	T	U	R	I	N	G	L	T	D	.

3. Date of incorporation/amalgamation: Date de la constitution ou de la fusion:

**1989-08-18**

4. The articles of the corporation are amended as follows: (Year, Month, Day)  
(année, mois, jour)

Les statuts de la société sont modifiés de la façon suivante.

To change the name of the corporation to Opal Manufacturing Ltd

**THE PORT AUTHORITY OF NEW YORK & NEW JERSEY  
PURCHASING SERVICES DIVISION  
ONE MADISON AVENUE 7<sup>TH</sup> FL.  
NEW YORK, NY 10010**

**Date: December 12, 2008**

**ADDENDUM #1**

To prospective Proposers on RFP # 17032 for Path's Acquisition of Ticket Vending Devices Capable of Dispensing Both Magnetic and Smartcard Media:

The proposal due date has been changed from:

December 12, 2008, no later than 2:00PM

To

January 9, 2009, no later than 2:00PM

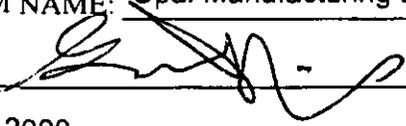
This communication should be initialed by you and annexed to your proposal upon submission.

In case any Proposer fails to conform to these instructions, its proposal will nevertheless be construed as though this communication had been so physically annexed and initialed.

THE PORT AUTHORITY OF NY & NJ

LARRY WAXMAN, MANAGER  
TECHNOLOGY & OPERATIONAL PROCUREMENTS

PROPOSER'S FIRM NAME: Opal Manufacturing Ltd.

INITIALED: 

DATE: January 6 2009

QUESTIONS CONCERNING THIS ADDENDUM MAY BE ADDRESSED TO  
LESLEY BROWN, WHO CAN BE REACHED AT (212) 435-3969.

**THE PORT AUTHORITY OF NEW YORK & NEW JERSEY  
PURCHASING SERVICES DIVISION  
ONE MADISON AVENUE 7<sup>TH</sup> FL.  
NEW YORK, NY 10010**

**Date: December 19, 2008**

**ADDENDUM #2**

To prospective Proposers on RFP # 17032 for Path's Acquisition of Ticket Vending Devices Capable of Dispensing Both Magnetic and Smartcard Media:

**THE PROPOSAL DUE DATE IS JANUARY 9, 2009, NO LATER THAN 2:00PM**

**1. The following changes are hereby made in the documents:**

**In addition to the Proposal Submission Requirements, the ticket dispenser RFP is being amended to include a provision to provide for connectivity from the devices to a central location for reporting and data storage.**

**The Proposer shall provide a means to run a proposed client application software that can generate reports and a LAN connection device to send data to a PATH switch/server.**

**This statement will be incorporated under Section 7 "Proposal Submission Requirements" page 11, Section F "Proposal" page 12, Section "Technical Requirements" page 13, last bullet on page 14, as part of the agreement.**

**Note: Attached is the Pre-Proposal Meeting sign in sheet.**

**QUESTIONS AND ANSWERS**

The following information is made available in response to questions submitted by Proposers to the Port Authority of New York and New Jersey (Port Authority). It addresses only those questions that the Port Authority has deemed to require additional information and /or clarification. The fact that information has not been supplied with respect to any questions asked by a bidder does not mean or imply, nor should it be deemed to have any meaning, construction or implication with respect to the terms and provisions of the bid which will be construed without reference to such questions.

**QUESTION 1:**

Could you please clarify the following statements found on pages 32 and 33 of your RFP. We are trying to determine a relative scope of your project and if you are looking for a \$15,000 kiosk or a \$60,000 TVM. In general, is your budget \$500,000 or \$2,000,000 for this project?

Page 32 C. Bill Validator: Please provide the model number of the "MEI standard model". The standard MEI model for transit applications would retail for \$9,000 plus \$700 per bill vault but MEI also has standard model bill acceptor that retails for \$500 and includes a bill vault.

Page 33 D. Coin Acceptor: Does "standard transaction escrow capability and transaction refund capability" include returning all bills that the customer inserted into the bill validator.

Page 33 I. Graphic Display Panel: Would a simple 2 line display meet your requirements or are you looking for a 10 or 15 inch color sunlight readable display?

**ANSWER 1:**

- 1) Each Proposer should proposal their best-recommended product base on the requirement of the RFP. The Path does not have a pre-determined budget available for disclosure.
- 2) There is no current model that we are utilizing.
- 3) No, if full price is not satisfied then money is returned via coins from hoppers.
- 4) A simple display would satisfy the requirements, based on proposal.

**QUESTION 2:**

Please provide operating environment information - indoor or outdoor installation?

**ANSWER 2:**

Every station has some form of shelter. No machines are directly exposed to weather, however there is no climate control in any PATH stations thus machines are expected to perform in extreme hot/cold/damp conditions

**QUESTION 3:**

Does the CAM require audio to meet the ADA requirements?

**ANSWER 3:**

No

**QUESTION 4:**

Does the customer require a printed receipt?

**ANSWER 4:**

Yes, should be an easy and time efficient process.

**QUESTION 5:**

Is there a requirement to connect the CAM to a Central Data System to provide real time monitoring, alarm and transaction reporting and remote support.

**ANSWER 5:**

At minimum the transactions are sent to a data center to be securely stored and allow for some form of access for data reporting.

**QUESTION 6:**

Does the Port Authority have an estimate of the average number of transactions expected per day at these machines?

**ANSWER 6:**

As mentioned at the meeting last week, transactions could range from 200 to 2000 per day depending on the location and day of the week.

**QUESTION 7:**

Your interpretation of ADA on this project is simply a low machine which is wheel chair accessible and which would have room for PATH to apply Braille stickers after the machines are delivered.

**ANSWER 7:**

Must meet all minimum ADA requirements.

**QUESTION 8:**

Will it be acceptable that each machine be fitted with two card columns in order to simultaneously dispense both types of card media but from a specified column?

**ANSWER 8:**

Must meet the technical specifications of the RFP.

**QUESTION 9:**

Would the Port Authority have a future interest in adding a credit card payment option?

**ANSWER 9:**

Must meet the technical specifications of the RFP. Please confine your proposal to the requirements of the RFP.

**QUESTION 10:**

Is Data Security certification an issue for the Authority?

**ANSWER 10:**

The Data Security certification is a prominent mark of distinction and reassures Port Authority that they would have access to the highest levels of security available.

**QUESTION 11:**

Is there a preferred mode for achieving online connectivity to the CDM?

**ANSWER 11:**

There is no preferred mode for achieving online connectivity to the CDM.

**QUESTION 12:**

Does the Port Authority need to own the back-end server used to review the machine audit data?

**ANSWER 12:**

See Attachment B, Section Y "Title" on page 36 of the RFP.

**QUESTION 13:**

Please confirm the contents of Proposer Prerequisites to be packaged in an envelope separate from other items include (our numbering):

1. Demonstration that proposed hardware/equipment has been installed in operation in public areas for at least two years prior to the date of submission of this proposal.

2. Demonstration that proposer has satisfactorily performed at least one contract to furnish a minimum of 16 or more devices, of a model similar to the one being proposed, to a single client.

3. Financial Information

4. A statement of work the proposer has on hand.

5. The name and address of the proposer's banking institution.

It is not clear from the paragraph spacing and numbering in the RFP document if the Proposer Prerequisites includes numbers three through five on this list or just numbers one and two.

**ANSWER 13:**

The Proposer Prerequisites should be clearly marked and do not need to be in a separate envelope.

**QUESTION 14:**

Background Check Plan: Please confirm that products offered as "commercial off the shelf" and produced at another location by employees of the bidder or subcontractor do not require background checks, only personnel performing work onsite on PATH property. This project does not contain any element of work to be performed on PATH property.

**ANSWER 14:**

All Proposers are to confirm if their company has a background check plan in place or not as identified in Section "Proposal Submission Requirements" page 11, Section F "Proposal" page 12, Section 4 "Background and Integrity Checks" page 15. Path will determine which contractor's employees shall need a Background and Integrity Checks.

**QUESTION 15:**

Confidentiality: Please confirm that portions of proposals marked "confidential" will not be released to any individuals outside of the Port Authority. This especially relates to confidential business data including financial records, personnel records, and customer lists.

**ANSWER 15:**

All proposals submitted are subject to Port Authority's Freedom of Information Policy.

**QUESTION 16:**

Multiple proposals: Please advise if a proposer response may include several alternate proposals in the same proposal package. The intention is to provide alternate pricing and technical options such as early delivery, early payment and different user display options.

**ANSWER 16:**

Each proposal must be submitted as individual and separate. However, Path seeks your company's best recommendation to the issued RFP.

**QUESTION 17:**

Option pricing: Please confirm that proposer will be able to provide option pricing for future purchases of goods provided under this contract.

**ANSWER 17:**

Only pricing sheets affiliated with this RFP will be evaluated.

**QUESTION 18:**

Ticket Dispensers: Please confirm that each ticket vending machine shall be equipped with two (2) ticket dispenser components as previously delivered to PATH.

**ANSWER 18:**

All proposals must meet the requirements of current RFP.

**QUESTION 19:**

Graphic Display Panel: Please confirm that alternate display technologies shall be considered as compliant to specification requirements. Such technologies would include Light Emitting Diodes (LED) and Vacuum Fluorescent Displays (VFD).

**ANSWER 19:**

Evaluated based on proposal.

**QUESTION 20:**

Delivery: PATH has asked for delivery in three sets of 10 devices. Does PATH have any preference as to the timing of deliveries? Would 10 devices per week be satisfactory?

**ANSWER 20:**

See Attachment B, Section X "Delivery" on page 36 of the RFP.

**QUESTION 21:**

Printer – The current machines do not have the ability to give the customer a receipt. The printer in the machine is inside the cabinet and is used for service reports only. The RFP calls for the printer being used to provide patrons with the option to print a receipt for cash transactions. Please confirm that this is a requirement on these machines.

**ANSWER 21:**

This Request for Proposal is not based on any specific equipment.

**QUESTION 22:**

3 Spare Parts – The RFP appears to require that we compile a list of recommended spare to be held for servicing the 30 machines and that we include the cost of 25% of our recommendations in the bid. Is this what is intended?

**ANSWER 22:**

See Attachment B, Section Q "Recommended Spare Parts" on page 34 of the RFP.

**QUESTION 23:**

Can we get approximately one hundred (100) samples of both the 10-mil and 30-mil cards?

**ANSWER 23:**

Upon award samples can be distributed to the selected contractor.

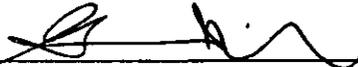
This communication should be initialed by you and annexed to your proposal upon submission.

In case any Proposer fails to conform to these instructions, its proposal will nevertheless be construed as though this communication had been so physically annexed and initialed.

THE PORT AUTHORITY OF NY & NJ

LARRY WAXMAN, MANAGER  
TECHNOLOGY & OPERATIONAL  
PROCUREMENT SERVICES

PROPOSER'S FIRM NAME: Opal Manufacturing Ltd.

INITIALED: 

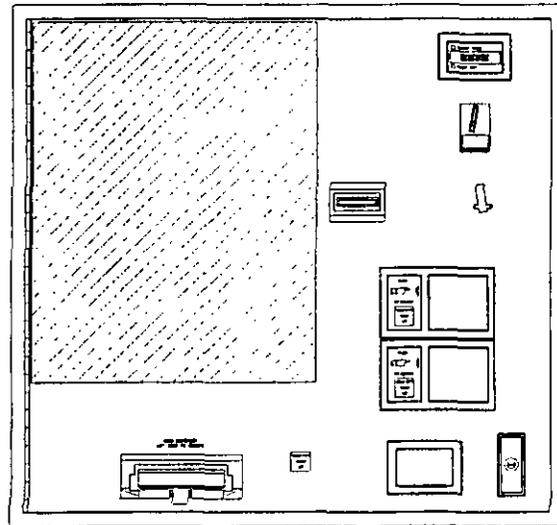
DATE: January 6 2009

QUESTIONS CONCERNING THIS ADDENDUM MAY BE ADDRESSED TO  
LESLEY BROWN, WHO CAN BE REACHED AT (212) 435-3969.





# **OPERATION AND MAINTENANCE MANUAL**



**DD/Coin Hopper**

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# SAFETY

Observe all warning signs in the machine and all cautionary notes in this manual, and follow the correct procedures.

This machine is supplied with 120 Volts AC to the connection box assembly and the transformers in the base of the cabinet. The other components and circuits are supplied with 24 Volts AC to reduce potential hazards. Appropriate caution should be used to prevent electrical shock from contact with live wires.

Ensure that the machine is grounded through its power cord to a properly polarized ground wall receptacle.

Disconnect the power cord before removing the connection box assembly.

If the machine is equipped with an alarm system, opening the door of the machine will automatically trigger the alarm system. To avoid this situation, turning the alarm key clockwise can disable the alarm.

ALWAYS ensure that the MAIN POWER SWITCH is in the OFF position when replacing a fuse or any component. This is to prevent blowing fuses unnecessarily due to a momentary surge of current which may occur in these circumstances.

ALWAYS use the specified type and capacity when replacing a fuse.

The minimum weight of an unassembled machine exceeds the 120 lbs. lifting standard. When lifting, installing or moving a machine, appropriate care should be taken to avoid the possibility of personal injury.

## GENERAL DESCRIPTION

The OVC – Controller 1 Series is capable of controlling an 8 - Column Card Dispense Vending Machine dedicated for use with any Bill Currency. The wall, recessed or pedestal mounted unit is accessible from the front. Operation is simple, direct and reliable from the perspective of the customer and operator. The construction of the unit is of the modular plug in concept thereby facilitating inter-changeability for efficient on site maintenance.

A 4 digit enabled credit display allows the customer to track the accumulated credit as currency is inserted. When the accumulated credit equals the vend price, product will be vended from the appropriate column.

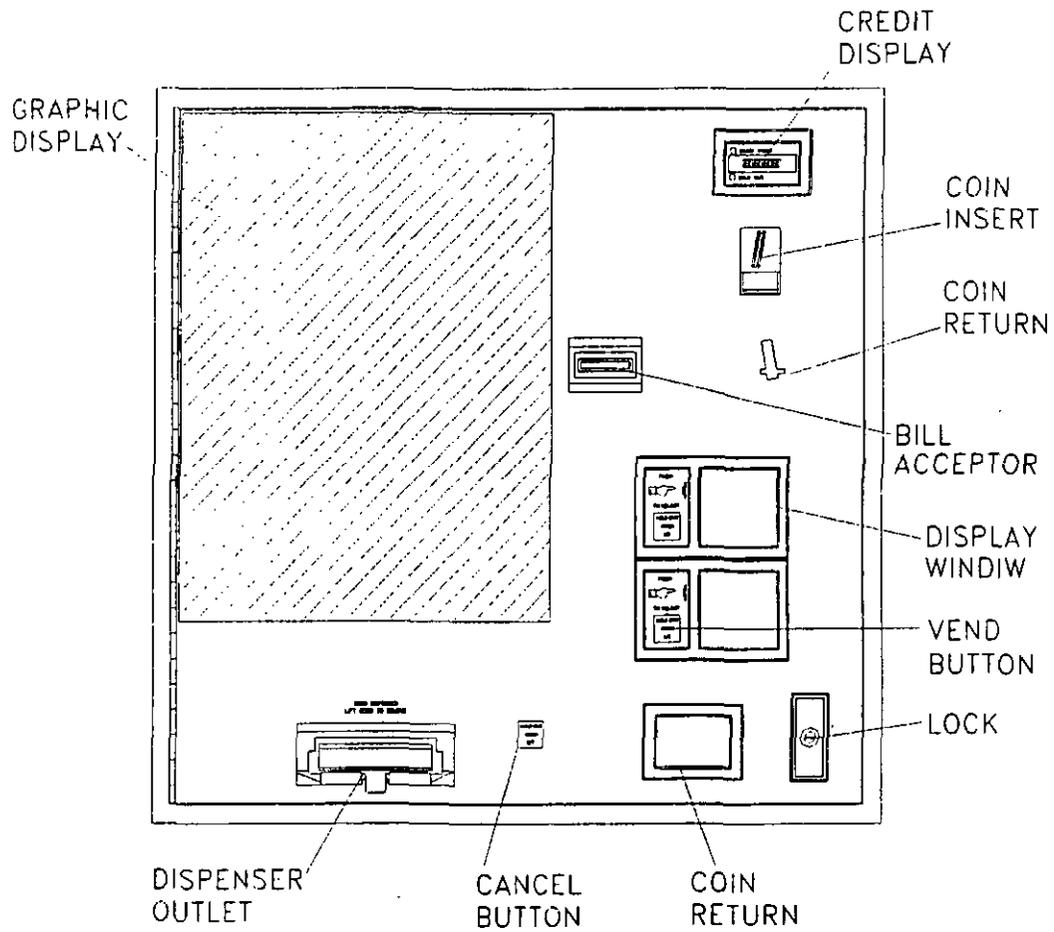
Upon completion of the vend, the credit display returns to zero. If the accumulated credit is less than the Vend price, the customer will be prompted to insert more money via the status lights.

The Machine is equipped with a Management Information System (MIS) for data acquisition. This data can be viewed locally at the machine by using the four-digit credit display in a scrolling mode. The MIS System is an integral part of the control board with automatic power fail integrity protection.

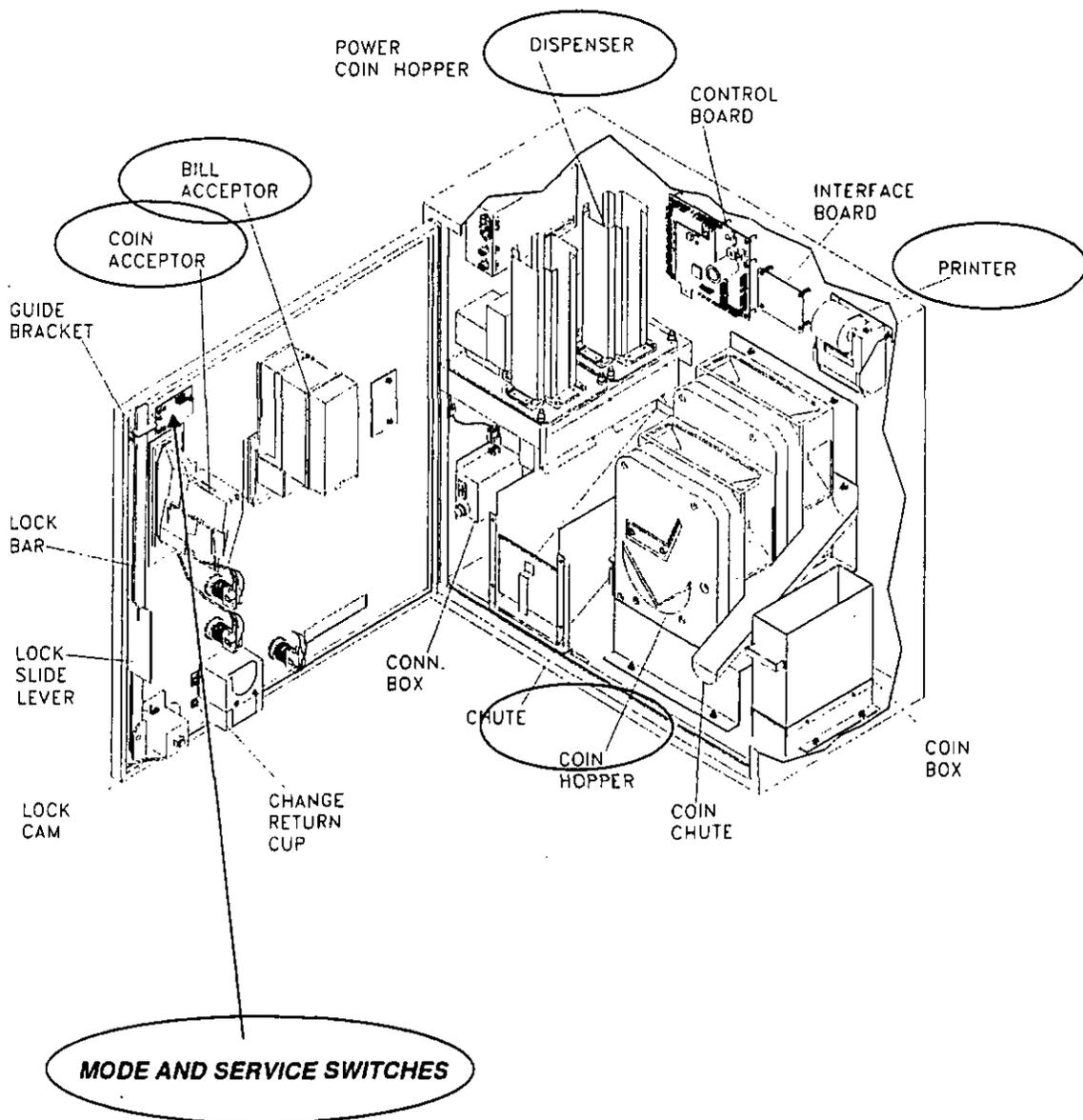
The OPVM has an optional audible built in alarm system to prevent illegal door entry and unwarranted abuse. The alarm will automatically reset every 30 seconds, being deactivated if the unwarranted situation no longer exists.

**PLEASE REFER TO PAGE 16 FOR MACHINE SETUP AND OPERATION.**  
**IT IS IMPORTANT THAT THESE SETUP PROCEDURES ARE DONE FIRST TO ENSURE SMOOTH OPERABILITY OF THIS MACHINE.**

# CUSTOMER INTERFACE



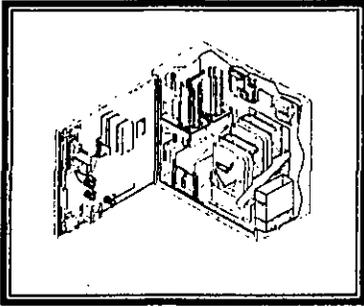
# INTERNAL LAYOUT



## MAJOR COMPONENTS & SPECIFICATIONS

### THE VENDING MACHINE CONSISTS OF THE FOLLOWING:

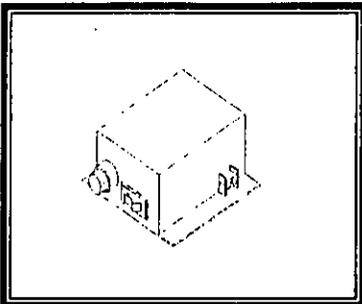
#### 1 CABINET ASSEMBLY



This consists of a durable painted enamel finished cabinet box and a hinged left hand access door. A triple point locking mechanism secures the door. The specifications are:

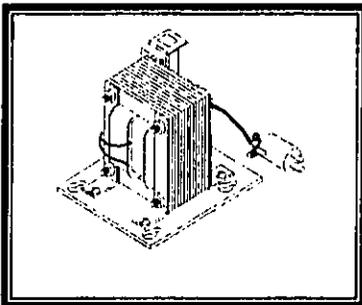
Cabinet - 30" wide x 29" high x 14.50" deep.

#### .2 CONNECTION BOX ASSEMBLY



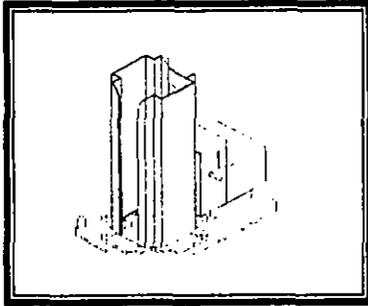
This is the 120 VAC distribution box. It consists of an on/off power switch, power indicating light, fuse holder and 24 VAC distribution plug.

#### 3 TRANSFORMER



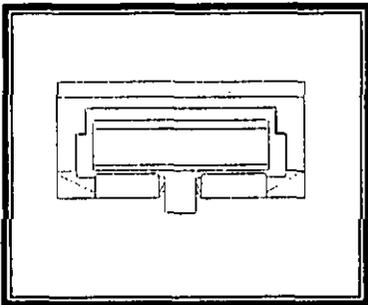
The transformer is used to power the control boards and all peripheral devices. It is powered by 240 VAC and supplies 24 VAC.

#### 4 CARD DISPENSING MODULE



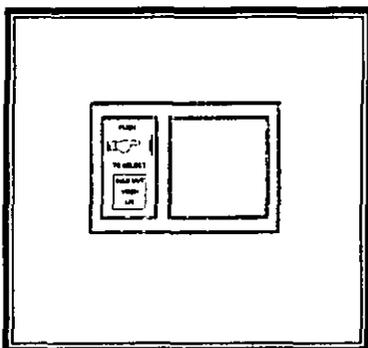
The Card Dispensing Module is a 24 VAC device responsible for the reliable dispensing of all cards. The dispenser utilizes the unique "gravity fed" dispensing mechanism that is tolerant to all variables normally encountered in the printing and manufacturing of cards. The dispensing module slides onto its mounting shell and is held in position by two spring-loaded locking pins.

### 5 CARD OUTLET DOOR



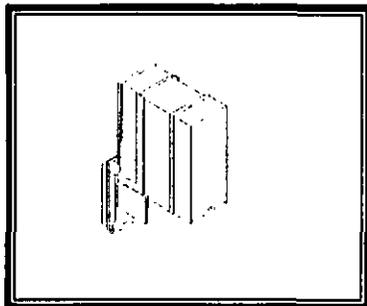
There is only 1 card outlet door. The outlet door is attached to the chute assembly thereby reducing the risk of external tampering.

### 6 VEND BUTTONS/SOLD-OUT LIGHTS



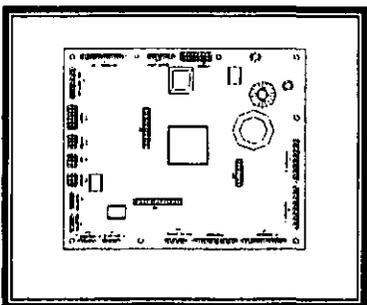
Each machine has two (2) sets of vending buttons with integral "Sold Out" light. The display window houses a "Vend" button and "Sold Out" light. The display window measures 3 1/8" x 3 1/8".

**7 BILL ACCEPTOR**



The Bill Acceptor (AE 2601) is of the last bill escrow version capable of being programmed to accept US bill currency. The superior recognition technology ensures rejection of more clones than any other bill acceptor, while requiring no motor speed or gain adjustments.

**8 VENDING CONTROLLER (OVC - 1)**

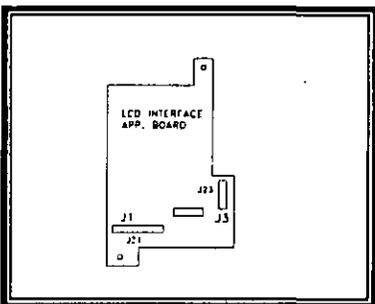


There are two (2) OVC1 Controller Boards. The main controller board (Master Board) interfaces with the following devices:-

- (a) Bill Acceptor
- (b) Card Dispensers 1 - 4
- (c) Vend Buttons/Sold Out Lights
- (d) Program Switches
- (e) Credit Card Reader
- (f) Modem (with interface application board (OPTIONAL))
- (g) Printer
- (h) Secondary controller board.

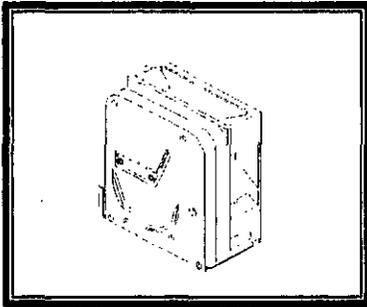
The secondary controller board (Slave Board) interfaces with Card Dispensers 5 - 8

**9 EXPANSION BOARD**

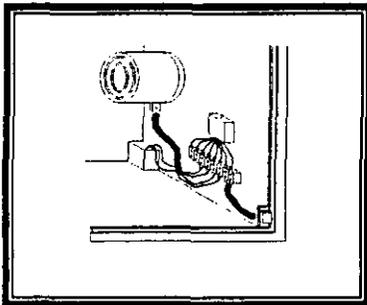


**FUNCTIONS**

- Setup, transactions and diagnostics mode for maximum flexibility when configuring the OPVM.
- Default to service mode when the access door is opened.
- On board MIS audit data with automatic power fail integrity protection.
- Protection against loss of on-board programming due to power failure.

**10 COIN HOPPER**

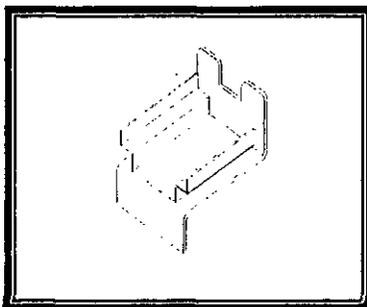
Universal Hopper MK4

**11 ALARM SYSTEM (OPTIONAL)**

The Alarm System consists of the following:-

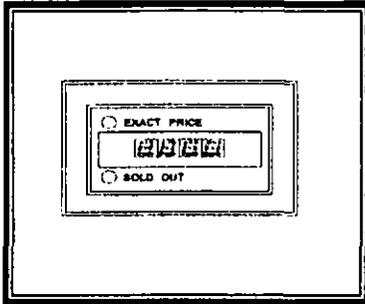
- (a) Control Circuit Board
- (b) Door Sensor Switch
- (c) Arm/Disarm Key Switch
- (d) Battery Pack
- (e) Siren

The Alarm Control Unit will sense any unwarranted impact to the equipment before damage is likely to occur. The impact threshold is variable. Impact as well as illegal door entry will trigger an audible siren mounted inside the cabinet. The audible range of the siren is 110 decibels. The external Arm/Disarm Key Switch allows safe access for serving. The alarm will automatically reset after 30 seconds.

**12 CRISS CROSS STACKER**

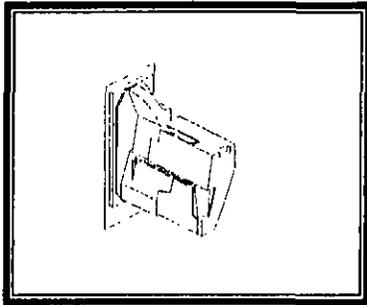
This device will assist the operator in the efficient Criss-Crossing of the cards for loading in the card dispenser.

**13 CREDIT DISPLAY/STATUS INDICATORS/PROGRAM SWITCHES**



- The Credit Display has
- a) 4 digit, 7 segment numeric LED
  - b) "Use Exact Change" LED - red
  - c) "Make Another Selection" LED - red

**14 COIN ACCEPTOR**



Cash Flow 111 Coin Acceptor

# ASSEMBLY

The OPVM should be assembled after installation of the cabinet to the mounting structure.

**CAUTION:** *Each OPVM has a unique key combination. It is possible to close the door and lock the keys in the cabinet. Care should be taken not to place any keys in the cabinet when servicing. One key should always be kept in a secure location.*



To unlock the cabinet, place key in slot and turn clockwise to release the spring loaded "T" handle. Turn the handle clockwise and pull the door open. To lock the OPVM, push the door closed and turn the "T" handle to a vertical position. Press the handle into the recess of the faceplate.

To fully assemble the OPVM, the following modules **MUST** be installed:-

- 1) Transformer Assembly
- 2) Dispensers
- 3) Bill Acceptor
- 4) Alarm Power (OPTIONAL)
- 5) Modem (OPTIONAL)
- 6) Credit Card Reader (OPTIONAL)
- 7) Printer
- 8) Coin Hoppers
- 9) Coin Acceptor
- 10) OVC 1 Controller Board & Extension Board
- 11) Coin Hopper Interface Board

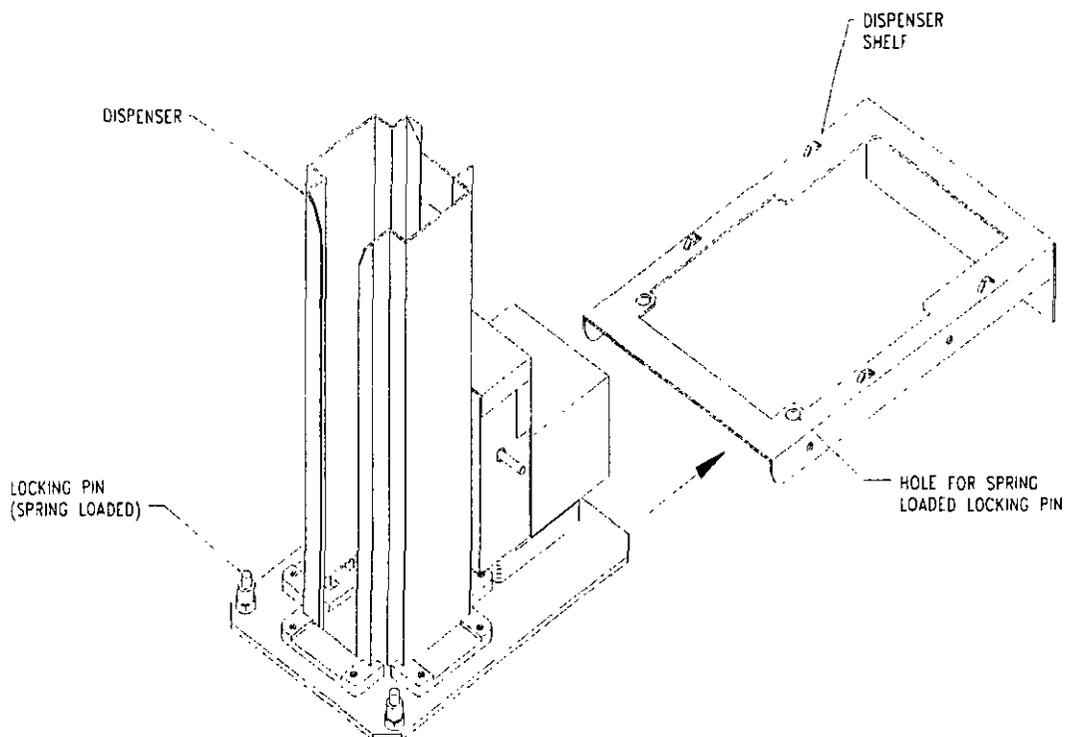
**IN SOME OPAL VENDING MACHINE MOST OF THESE PARTS ARE ALREADY FACTORY INSTALLED**

**CARD DISPENSER**

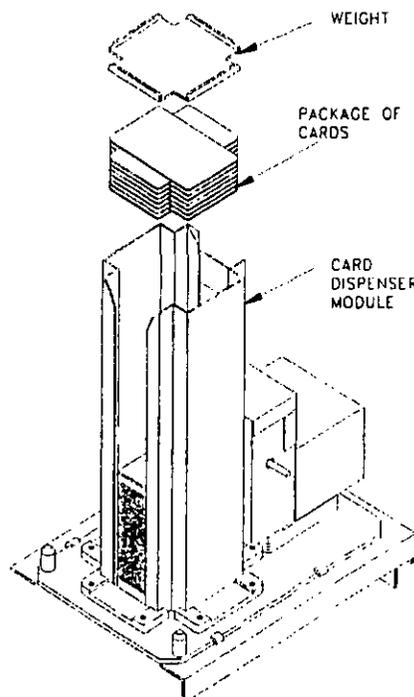
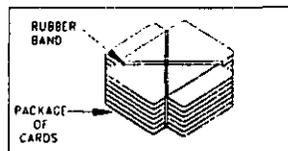
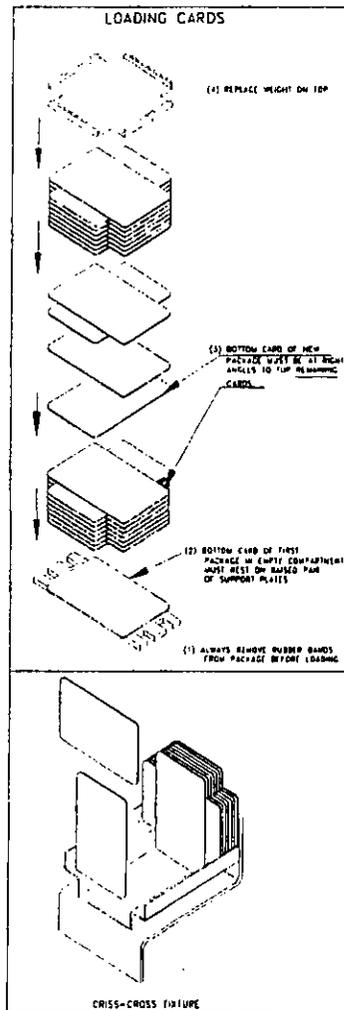
Install the dispensing modules by placing it onto the shelf unit until the two spring loaded locking pins are engaged in the matching holes of the shelf. Ensure that the base plate of each dispenser is securely held in place by projecting tabs of the shelves.

Plug the dispenser into the appropriate socket of the control board. Press the reset switch (red) on each dispenser. Load each dispenser as shown on next page. Place weight on to each stack of cards. Card stack should be sufficient enough so that the empty lever is not activated.

**WARNING:** *Dispensers must be inserted into shelf until locking pins are engaged. Failure to comply will result in products hanging up in the delivery chute.*



# CARD DISPENSER - Loading Procedure



**NOTE: Please remove weight first before stacking any cards in the dispenser**



# MACHINE SET-UP & OPERATION ROUTINE

## 1 POWER UP

Open the door and switch the machine ON (The 4-digit LED will display 4.86 (Software version of OVC1 Main Board). **TO SETUP THE MACHINE FOLLOW THE PROCEDURES BELOW. THE MODE AND SERVICE BUTTON ARE LOCATED ON THE INSIDE OF THE DOOR BEHIND THE 4-DIGIT LED DISPLAY (SEE PAGE 6 FOR LOCATION OF SWITCHES)**

## 2 CONTROLLER SETUP

### (2A) Set Operate Mode - Fn-6: OP-1 or OP-2

Press Mode button and scroll to Fn-6  
 Press Service once, then Mode button and scroll to Eddt  
 When Eddt is displayed press Mode button and hold. Op-2 OR Op-1 will be displayed.  
 Press Service button to set to Op-1

### (2B) Set Preset - Fn-6

Press Mode button and scroll to Fn-6  
 Press Service once then Mode button and scroll to Eddt  
 When Eddt is displayed press Mode button and hold. Op-2 will be displayed.  
 Press Mode Button to HdL  
 Press and hold Mode button; hdUr will be displayed  
 Press Mode button; curr will be displayed  
 Press Service button and Pset will be displayed  
 Press Service Button to set Pset.

### (2C) Set Coin Type Assignment(Hopper) - Fn-6: h -11 to h-15 = hopper 1 or 2

Press Mode button and scroll to Fn-6  
 Press Service button and scroll to Eddt  
 When Eddt is displayed press Mode button and hold. Op-2 will be displayed.  
 Press Mode Button to HdL  
 Press and hold Mode button; hdUr will be displayed  
 Press Mode button; curr will be displayed  
 Press Mode button to Mdb.  
 Press Service button ONCE  
 Press Mode button and scroll to H-11 to H-15. Using Service button, set coin type to hopper #1 or #2

**(2H) Set Coin Inventory - Fn-3:**

Press Mode button and scroll to Fn-3

Press Service once then Mode button and scroll to coin amount that was assigned to the hoppers. (this is displayed after In-4). Press Service button to set the inventory in the hoppers.

**(2I) Set Card Inventory - Fn-3: BA1-2 = desired amount**

Press Mode button and scroll to Fn-3

Press Service once then Mode button and scroll to BA -1 and BA 2.

Press Service button to set the card inventory.

**WARNING:**

In order to provide accurate coin management, addition and removal of coins to the Coin Acceptor must be performed in the

- a) Automatic Tube Float-Up Mode - to add coins.
- a) Dispense Coins/Empty Tubes - to remove coins.

The minimum number of coins in each tube must always be equal to two coins. If these criteria are not met, the coin tube inventory will be short by two coins in the print report.

**3 COIN HOPPER LOADING AND SETTING UP**

This system was developed to be able to dispense high quantities of change from any given transaction. Each hopper is capable of dispensing only one coin type at a time. The Main Controller software controls and monitors the coin inventory.

**Coin Inventory has to be entered manually into the controller by the operator; See (2H) above**

**Please refer  
to Coin  
Acceptor  
Manual for  
setup and  
operating  
instructions.**

Each hopper **MUST** be assigned to the coin type that the operator requires to be dispensed.

Assigned the hoppers to a specific coin type can be done through the MDB setup menu on the main controller (see Functions on Page 33).

Five coin types are supported: 5c, 10c, 25c, \$1, \$2 coins. Each coin type is identified by the five hopper indexes displayed in the MDB setup.

SEE TABLE BELOW

**WHEN ASSIGNING COIN TYPES TO THE HOPPERS (Fn-6) IT IS IMPORTANT TO ASSIGN THE LOWER VALUED COIN TO HOPPER #1 AND THE HIGHER VALUED COIN TO HOPPER #2**

HOPPER INDEX	COIN VALUE	HOPPER ASSIGNMENT
H-11	5C	
H-12	10C	
H-13	25C	1
H-14	\$1.00	2
H-15	\$2.00	

The Table above shows that hopper #1 is assigned to dispense 25c coins and hopper #2 is assigned to dispensed #1.00 coins.

The coin values shown in the Table is not shown in the MDB setup and is only used as a visual representation.

**(2D) Set Change Limit - Fn-6: SL = to desired amount**

Press Mode button and scroll to Fn-6

Press Service once then Mode button and scroll to SL

Press Service button to set change limit

**(2E) Set Bill Limit - Fn-6: bL = desired amount**

Press Mode button and scroll to Fn-6

Press Service once then Mode button and scroll to bL

Press Service button to set bill limit

**(2F) Set Price #1 - Fn-6: max to -**

Press Mode button and scroll to Fn-6

Press Service once then Mode button and scroll to Pr-1

Press Service button to set price #1

**(2G) Set Price #2 - Fn-6: max to -**

Press Mode button and scroll to Fn-6

Press Service once then Mode button and scroll to Pr-2

Press Service button to set price #2

**4 SET INVENTORY**

Set the inventory using the Fn-3 mode and the bA-# functions. (See (2I) above)

**5 READ**

Read data via the scrolling display from Fn-1, Fn-2 and Fn-3.

**6 CLOSE DOOR**

Place the machine in the operational Mode: Display = 0000

**7 PRINT STATEMENT**

This print statement will show all the prices, inventory, and coin counts that have been set. This system will print two print statements with the same operation.

**8 UNVENDED CREDIT**

Unvended credit will be handled by returning all credits in the following conditions:

- a) When the credit timeout option is active with a value set greater than "0" and the timeout criteria is met.
- b) When the cancelled button is depressed.

# THEORY OF OPERATION

This Machine is equipped with one Control Board, an extension board and a hopper interface board.. The Control Board has its own specific duties controlled by its own dedicated software for that purpose. The Control Board carries out duties that controls the vending logic for dispensers 1 through to 4 and all major functions related to the normal operating logic of the Vending Machine.

The Machine is delivered to the customer with the low level operating logic pre-configured from the factory. When the Machine is received the user must now configure the High level logic, such as Prices, Inventory and Credit Time out.

## CONTROLLER FEATURES

1. Multi – pricing
  - Capable of setting prices up to 9999 in increments of 1.
2. Multi – vending
  - Capable of vending multiple products from a single credit or accumulated credit.
3. Bill Limit
  - Capable of accepting a bill denomination which is higher in value than the highest set price.
4. Modem (optional with piggy back board)
  - Capable of using LAN line or Wireless modems for remote administration.
5. Coin Limit
  - Maximum allowable change for payback.

**DEFINITIONS**

- Higher Selection Price* This value is one of the key factor for determining maximum credit accumulation in OP-2 and the Exact Change modes.
- Highest acceptable Bill* This is programmed in the bill accepting device and requires manual setting in the controller. Once set, this value will be the governing factor for maximum credit accumulation.
- Change Limit* This is defined as the allowable over payment of any product or the maximum value of change to be returned to the customer after a completed transaction.  
*Caution:*  
*The value of maximum change is a user configurable option and the higher the setting of this limit the greater the possibility of depleting the coin storage tubes. I.e. the machine will run out of change.*
- Escrow Return* Return of all equivalent inserted coins.  
*Return of all equivalent inserted amount (bills and coins. NOTE that all payback will be made with coins only)*

**GENERAL OPERATION**

The controller supports two "Operation Modes for execution of the required vending functions. The operating modes must be configured for the desired function by use of the Mode and Service switches.

<b>Mode 6 (Fn-6)</b>	<b>Setup</b>
OP-1	Auto Vend - credit accumulation.
OP-2	Manual Multi Vend.

**Auto Vend (OP1) - Credit Accumulation**

- Conditions:
- Single Column Machine Only
  - Escrow capable Bill Acceptor
  - No Vend Button

Selecting OP1 will allow accumulation of credit to match a single priced product. A single product will be automatically dispensed when the accumulated credit is equal to any given price.

Credit can be accumulated by insertion of the standard acceptable bill denominations.

The last bill will not be accepted if it causes the credit to exceed the vend price.

- Upon insertion of the first bill the "Exact Change" light will flash until the vend is completed.

**Auto Vend (OP2) - Single Product**

- Conditions:
- One or more columns
  - Escrow capable Bill Acceptor
  - Optional Vend Buttons
  - Manual Vending

This mode is used to accumulate credit up to the desired product or the maximum vend price and to manually select that product. The highest accumulated credit will not exceed the highest priced product or the next lesser higher priced product if the highest priced product is sold out or becomes inoperable.

(The exception to the rule is the ability to accumulate higher than the highest priced product by entering that value in the "BL" field)

- The "Try Another Selection" LED will flash when an inserted bill does not match a product price.

SL This parameter is used to set the change limit within the limits of \$0.00 to the set level.

The default value is \$0.00.

BL This is used to establish the highest acceptable bill denomination for vending computation.

Mode 5 (Fn-5) **Diagnostics**  
tUbe **Tubes inventory status.**

- A) **Multi-pricing**  
~ Capability to maximum of 9999 in increments of 1.
- B) **Change Limit**  
~ User programmable to a maximum of whatever is desired by operator.
- C) **Maximum Credit Limit**  
~ This is the value of the maximum allowable credit accumulated, which is determined by the maximum priced product
- D) **Customer Interface Devices**
- "Use Exact Change"**
- i) The last inserted bill causes credit to exceed the allowable credit limit.
  - ii) When escrow return of coins is requested and any bill credit is held.

If a bill is inserted and it is greater than the highest vends price plus the SL, the "Exact Price" LED should flash.

**"Try Another Selection"**

This LED indicator will flash when

- i) Credit is greater than change limit after the first purchase.
- ii) The selection price is greater than available credit
- iii) The switch for a sold-out or defective column is depressed only when credit is available.

If the amount of money inserted is more than the product required, but less than the other available product, the "Try Another Selection" LED will flash.

**"Product Sold-out Lamp"  
(Vend Buttons)**

If a product is sold out the corresponding "Sold-out" light will not illuminate.

**Product Selection Vend  
Button with  
Sold Out Lamp**

The Product Selection Vend Buttons will be normally OFF.

The Vend buttons becomes illuminated if

- The matching column goes empty
- The matching column fails to complete a vend cycle
- The matching column is unplugged and a vend is requested from that column.

## OVERVIEW

Credit is accumulated from a Coin and or an escrow capable Bill Acceptor and displayed on the four credit display.

Before credit is established, the credit display will indicate \$00.00 and the machine will respond to the depression of a selection button by displaying the price of that selection. If the product in that column is sold out the "Make Another Selection" LED will flash. Vend buttons will be in the normally "OFF" condition.

When credit is established, the amount of the credit will be displayed on the four (4) digit display. Repeated insertion of bills and or coins will cause the displayed credit to be incremented by the inserted value.

If a combination of coins and bills are used to accumulate credit, any high value bills causing the credit to exceed the maximum allowable credit will be rejected and the "Use Exact Change" LED will flash.

Initial insertion of a coin or bill below the price of a card will limit or restrict further currency acceptance i.e. when coins are the first currency inserted, and high value bills that causes the maximum credit value to be exceeded will be rejected..

The exception to this rule is the column with the highest vend price. If the higher value column is sold out, credit will be accumulated to the lower vend price; i.e. highest bill vend price plus the change limit after empty or faulty columns are sensed. This feature will force the customer to deal within the transaction limits of the available products.

Escrow return can be requested at any time to return all coins.

Credit accumulated by bill insertion will be retained and the "Use Exact Change" LED will flash.

Depression of the # 1, 2 Product selection buttons will cause the vending of that product.

The change value is displayed momentarily and is decremented as change is paid back in coins until credit is depleted.

If the credit displayed after vending is equal to or less than the maximum change limit, the appropriate change is returned and the display is cleared to \$00.00

A vend cycle is completed when a card is delivered, any change is returned and the motor vend switch returns to open (at the beginning of the cycle). At this time, the cash and vend counters are updated along with the MIS fields.

**SOLD OUT OPERATION**

Product inventory levels are checked via the dispenser empty switch during the power up sequence and door closure. If both columns are sold out or empty at power up, the coin and bill acceptors will remain disable. (will not accept money).

If the system becomes sold out after a vend, the coin and bill acceptors will be disabled. The vend cycle is completed before the sold out condition is initiated by the controller and any established change pay-out is not effected. The credit display will function as in normal operation and return to \$00.00.

The controller will signal these conditions by the following:

- i) The Sold Out Lamps now operates as follows:  
 Light on: Dispenser Filled.  
 Lights off: Dispenser Empty.

**FUNCTION OF COIN AND BILL ACCEPTORS**

COIN ACCEPTOR	BILL ACCEPTOR
<p>The coin acceptor will validate all inserted coins programmed for acceptance</p> <p>If accepted, they will replenish the coin payback tubes of the coin acceptor where applicable.</p>	<p>The "green" inserted bill lights will be scrolling when the bill acceptor is in the idle mode.</p> <p>When a bill is accepted, the insert bill lights flash. These lights will flash until the bill is stacked and the acceptor returns to the idle mode. The lights will remain "off" if the bill acceptor is defective or the machine is "out of service".</p>
<p>The coin acceptor signals the value of each coin to the control board and the cumulative total is displayed.</p>	<p>Bill will be rejected and the 'Exact Change" LED will blink ten times when the total accumulated credit exceeds the vend price and there are insufficient coins in the inventory to pay the correct change.</p>
	<p>Bill denominations programmed for acceptance will be validated upon insertion and stacked if accepted.</p>

**USER INTERFACE**

The Master Control Board and Expansion Board operates the following indicators and controls that are located on the front of the vending machine.

INDICATOR	FUNCTIONS
Product #1 "Sold Out" Lamp	Indicates product #1 out of stock or vend mechanism failure when active.
Product #2 "Sold Out" Lamp	Indicates product #2 out of stock or vend mechanism failure when active.
4 Digit "Credit Display"	Displays the price of a product when the corresponding vend button is pressed. Also used to display MIS Data, Transaction Logs, Setup and Service routines. Leading Zeros are suppressed during transaction.
Product #1 "Vend Button"	Selects product #1 when pressed
Product #2 "Vend Button"	Selects product #2 when pressed
Cancel Button	Press to cancel transaction, and money will be returned (no bills, coins only)

**VEND MOTOR CONTROL**

The Controller operates up to four product Dispensers, with an "empty" and "motorhome" micro switch per dispenser.

A normal vend cycle involves reading the product "empty switch" energizing the appropriate vend motor until the "home switch" is activated.

*If a product column is empty (empty switch activated) prior to a vend cycle, the controller will turn on the "sold out" lamp for that column and suspend any vending activity related to that column.*

The "home switch" is ignored for the first .100ms of the cycle thus allowing the cam to move away from the switch.

If the Motor "home switch" is never deactivated or not activated within a 2 second period, the motor is de-energized and the vend cycle will be assumed to have failed.

If the appropriate motor home switch does not reclose within 10 seconds, the controller will assume that the dispenser is jammed and label that column inactive and the sold out lamp will be illuminated.

This condition can also work in conjunction with the "trip breaker" on each dispenser.

MICRO SWITCH	STATE
"Empty switch"	Closed when dispenser is empty. Open when dispenser is loaded.
"Motor Home"	Closed when motor is home. Open when motor is away from home

**DOOR SWITCH**

The "door switch" is used to toggle between the "operate" and "service" modes.

***When the door is opened, the machine will default to the Service Mode #1 (Fn-1).***

Access is allowed to all service routines without affecting the MIS fields.

The machine will accumulate credit and complete a vend cycle without updating the MIS fields, when in the Fn-5 Diagnostic Mode.

Closing the door will automatically cancel all test routines, store current setup and default to the "operate mode".

**KEY SWITCH FUNCTIONS**

The "Key Switch" allows the following functions to be performed without opening the access door of the vending machine:

- When toggle it renders the machine "Out of Service"

**PRINTOUT STATEMENT**

2001/02/07	10:59:20	
OPVM - 4.72		
MACHINE ID#	000000	
PRINT#	0	
DOOR OPEN#	0	
MIS RESET#	0	
Mode	OP-2	
SL	\$0.00	
BL	\$0.00	
PRICE #1	\$0.00	
PRICE #2	\$0.00	
PRICE #3	\$0.00	
PRICE #4	\$0.00	
<b>INTERVAL</b>		
	Vends	Total
P#1	0	\$0.00
P#2	0	\$0.00
P#3	0	\$0.00
P#4	0	\$0.00
5c	0	\$0.00
10c	0	\$0.00
25c	0	\$0.00
100c	0	\$0.00
Total	0	\$0.00
1\$	0	\$0.00
5\$	0	\$0.00
10\$	0	\$0.00
20\$	0	\$0.00
Total	0	\$0.00
Total Cash		\$0.00
Total Change		\$0.00
Total Unv. Cash		\$0.00
Net Sales		\$0.00
Coin Box		\$0.00
<b>INVENTORY</b>		
	Start	End
Product		
P#1	0	0
P#2	0	0
P#3	0	0
P#4	0	0
Coin Tubes		
5c	0	\$0.00
10c	0	\$0.00
25c	0	\$0.00
100c	0	\$0.00
<b>TOTALS</b>		

ID # of Machine  
 # of Print transactions  
 # of door openings  
 # of reset to machine

OP1- Auto Vend OP2 - Manual Vend  
 SL - Change Limit  
 BL - Bill Limit  
 Prices for Columns # 1 - 8

**INTERVALS**  
 A Resettable Value  
 Resets after every print Statement  
 OR  
 after Fn-1 (RESE)

**TOTALS**  
 A non-Resettable value.  
 This will keep on adding for every transaction made by the Vending Machine.

Inventory for the  
 3 Dispensers  
 And  
 Coin Tubes

<b>TOTALS</b>					
	Vends	Total			
P#1	0	\$0.00			
P#2	0	\$0.00			
P#3	0	\$0.00			
P#4	0	\$0.00			
5c	0	\$0.00			
10c	0	\$0.00			
25c	0	\$0.00			
100c	0	\$0.00			
Total	0	\$0.00			
1\$	0	\$0.00			
5\$	0	\$0.00			
10\$	0	\$0.00			
20\$	0	\$0.00			
Total	0	\$0.00			
Total Cash		\$0.00			
Total Change		\$0.00			
Total Unv. Cash		\$0.00			
Net Sales		\$0.00			
Coin Box		\$0.00			
<b>LAST 5 TRANSACTIONS</b>					
	#1	#2	#3	#4	#5
Inserted Bills					
1\$	0	0	0	0	0
5\$	0	0	0	0	0
10\$	0	0	0	0	0
20\$	0	0	0	0	0
Inserted Coins					
5c	0	0	0	0	0
10c	0	0	0	0	0
25c	0	0	0	0	0
100c	0	0	0	0	0
Coin Change					
5c	0	0	0	0	0
10c	0	0	0	0	0
25c	0	0	0	0	0
100c	0	0	0	0	0
Vends					
V#1	0	0	0	0	0
V#2	0	0	0	0	0
V#3	0	0	0	0	0
V#4	0	0	0	0	0

## OPERATING MODES

**The basic operating modes are as follows:**

- OP1 - Auto Vend - Credit Accumulation
- OP2 - Manual Multi Vend - with credit accumulation

### **Auto Vend (OP1) - Credit Accumulation**

- Conditions:
- Single Column Machine Only
  - Escrow capable Bill Acceptor
  - No Vend Button

Selecting OP1 will automatically cause the number of columns to default to one (CL=1). A single product will be automatically dispensed when credit equals the vend price.

Credit can be accumulated by insertion of the standard acceptable bill denominations. The last bill will not be accepted if it causes the credit to exceed the vend price.

- Upon insertion of the first bill the "Exact Change" light will flash until the vend is completed.

## BILL ACCEPTOR FAILURE

**THE FOLLOWING CAN CAUSE A BILL ACCEPTOR FAILURE:**

- |                            |                            |             |
|----------------------------|----------------------------|-------------|
| 1. Paper jam               | 2. Coin jam                |             |
| 3. No power                | 4. Broken Drive belt/wheel |             |
| 5. Defective Bill Acceptor | 6. Physical Damage         | 7. Bent Pin |

*A defective or damaged Bill Acceptor or a broken drive belt or wheel must be repaired or replaced*

## 7.0 FUNCTIONS

*The Controller supports six Service Modes in order to execute its required functions. These modes are accessed by use of the "Mode" and "Service" switches.*

- Depression of the "mode switch" allows the user to scroll through the six different Modes.
- Depression of the "service switch" allows access to the current displayed Service Mode. The current setting of the first function within that service mode will be displayed. The displayed function can be edited by depressing the "service switch" until the desired option is displayed. Pressing the "mode switch" once will allow the user to exit that function thus saving the previous displayed option and index to the next function. After scrolling to the end of the functions within that mode, depression of the "mode switch" will cause the display to exit that mode and step to the next mode.
- Repeated depression of the "mode switch" will cause the display to revert to "Fn -1".

**THE SERVICE MODE ASSIGNMENT ARE AS FOLLOWS:**

<b>MODE 1 [Fn-1]:</b>	<b>Resettable MIS Data</b>
<b>MODE 2 [Fn-2]:</b>	<b>Non-resettable MIS Data</b>
<b>MODE 3 [Fn-3]:</b>	<b>Transactions</b>
<b>MODE 4 [Fn-4]:</b>	<b>Activity Report</b>
<b>MODE 5 [Fn-5]:</b>	<b>Diagnostics</b>
<b>MODE 6 [Fn-6]:</b>	<b>Setup</b>

**MODE 1 [Fn-1]:****Resettable M.I.S. Data (Interval Between Resets)**

**NOTE:** The **MODE & SERVICE** Switches are located behind the door.  
 With the door opened, the display will read [Fn-1]  
 Pressing the Service Button once will display **t-bc**.  
 Pressing the Mode Button will display **n-sa** (Net Sales). Continue the steps as needed shown below.

t-bc	- Value of Cash taken by the Machine
n-sa	- Net Sales
cASh	- Cash Sales by \$
cou	- Number of Vends
CA-1	- Cash Sales of Column #1
CA-2	- Cash Sales of Column #2
CA-3	- Cash Sales of Column #3
CA-4	- Cash Sales of Column #4
Co-1	- Number of Vends of Column #1
Co-2	- Number of Vends of Column #2
Co-3	- Number of Vends of Column #3
Co-4	- Number of Vends of Column #4
t-c	- Value of Coins accepted
cH	- Value of Cash dispensed as change
c-bt	- Value of Coins in Box
---5	- Number of 5c coin accepted
---10	- Number of 10c coin accepted
---25	- Number of 25c coin accepted
---100	- Number of 100c coin accepted
n-c	- Number of Coins accepted
t-b	- Value of Bills to Cash Box
----1	- Number of 1 bills accepted
----5	- Number of 5 bills accepted
---10	- Number of 10 bills accepted
---20	- Number of 20 bills accepted
nb	- Number of Bills to Cash Box
dcrd	- Credit Card Transaction
RESET	- Reset all Totals
Fn-1	

**MODE 2 [Fn-2]:****Non-Resettable MIS Data (Cumulative Totals)**

**NOTE:** The **MODE & SERVICE** Switches are located behind the door.  
 With the door opened, the display will read [Fn-1]  
 Pressing the Mode Button once will display [Fn-2].  
 Pressing the Service Button once will display t-bc.  
 Pressing the Mode Button will display n-sa (Net Sales). Continue the steps as needed shown below.

t-bc	- Total Value of Cash taken by the Machine
n-sa	- Total Net Sales
cASh	- Total Cash Sales by \$
cou	- Total Number of Vends
CA-1	- Total Cash Sales of Column #1
CA-2	- Total Cash Sales of Column #2
CA-3	- Total Cash Sales of Column #3
CA-4	- Total Cash Sales of Column #4
Co-1	- Total Number of Vends of Column #1
Co-2	- Total Number of Vends of Column #2
Co-3	- Total Number of Vends of Column #3
Co-4	- Total Number of Vends of Column #4
t-c	- Total Value of Coins accepted
cH	- Total Value of Cash dispensed as change
c-bt	- Total Value of Coins in Box
---5	- Total Number of 5c coin accepted
---10	- Total Number of 10c coin accepted
---25	- Total Number of 25c coin accepted
---100	- Total Number of 100c coin accepted
n-c	- Total Number of Coins accepted
t-b	- Total Value of Bills to Cash Box
----1	- Total Number of 1 bills accepted
----5	- Total Number of 5 bills accepted
---10	- Total Number of 10 bills accepted
---20	- Total Number of 20 bills accepted
nb	- Total Number of Bills to Cash Box
dcrd	- Total Credit Card Transaction
RESET	- Reset all Totals
Fn-2	

**MODE 3 [Fn-3]:****Transactions**

**NOTE:** The **MODE & SERVICE** Switches are located behind the door.  
 With the door opened, the display will read [Fn-1]  
 Pressing the Mode Button twice will display [Fn-3].  
 Pressing the Service Button once will display Prt.  
 Continue the steps as needed shown below.

- |       |   |
|-------|---|
| Prt 1 | - Print Report without resetting the MIS data.                    |
| Prt 2 | - Print Report allows reset on the MIS after printing.            |
| Prt 3 | - Print Report is a backup of Print 2 after Print 2 is completed. |
| CLr   | - Cleared any displayed credit and update that MIS field          |
| Un-1  | - Interval Total of un-vended cash                                |
| Un-t  | - Total of un-vended cash   |
| BA1   | - Starting inventory of column #1                                 |
| BA-2  | - Starting inventory of column #2                                 |
| BA3   | - Starting inventory of column #3                                 |
| BA-4  | - Starting inventory of column #4                                 |
| IN-1  | - Current balance of column #1                                    |
| IN-2  | - Current balance of column #2                                    |
| IN-3  | - Current balance of column #3                                    |
| IN-4  | - Current balance of column #4                                    |
| 25c   | - Current balance of Hopper #1                                    |
| 100c  | - Current balance of Hopper #2                                    |
| *LA-5 | - Display Last 5 Transactions by Column & Bill Denominations      |
| tr-#  | - Transaction number (1 to 5)                                     |
| ----1 | - Number of 1 bills accepted per transaction                      |
| ----2 | - Number of 5 bills accepted per transaction                      |
| ----3 | - Number of 10 bills accepted per transaction                     |
| ----4 | - Number of 20 bills accepted per transaction                     |
| ----5 | - Number of 50 bills accepted per transaction                     |

**Coin denominations MUST be assigned to hoppers #1 or #2 in Fn-6 before setting these fields**

**\* Only the accepted bill denominations will be displayed when activated by the external key.**

**To reset inventory,**  
 Use Mode button to get to BA-x  
 Scroll service button x 1, release, & repeat once more.

**To set inventory, Prices etc.. press**  
 1) Service Button x 1 and hold to scroll up or  
 2) Release button, press again and hold to scroll down



**MODE 4 [Fn-4]:      Activity Report (Local & Remote)**

**NOTE:** The **MODE & SERVICE** Switches are located behind the door.  
With the door opened, the display will read [Fn-1]  
Pressing the Mode Button x 3 will display [Fn-4].  
Pressing the Service Button once will display nd.  
Continue the steps as needed shown below.

- nd                    - Number of Door Openings
- PL                    - Number of Power "ON"
- tESt                - Number of Test Vends
- nrEs                - Total number of reset
- nPrt                - Total number of print statements
- \* dL                - Number of Downloads
- \* Co1               - Dispenser #1 Fault
- \* Co2               - Dispenser #2 Fault
  
- \* Al                - Number of Security Alarms
- \* LrES             - Date and time stamp of Last Reset
- \* So1               - Product #1 Sold Out
- \* So2               - Product #2 Sold Out
  
- \* bErr             - Bill Acceptor Fault
- \* Int               - Interval between transactions
- \* dLo1             - Product #1 Low Warning
- \* dLo2             - Product #2 Low Warning
  
- \* fULL             - Bill Acceptor full warning

**\* Available only with optional Modem Data Box**

### MODE 5 [Fn-5]:

#### Diagnostics

**NOTE:** The **MODE & SERVICE** Switches are located behind the door.  
 With the door opened, the display will read [Fn-1]  
 Pressing the Mode Button x 4 will display [Fn-5].  
 Pressing the Service Button once will display bct.  
 Continue the steps as needed shown below.

- bct - Test Bill Acceptor
- dt-1 - Test Vend Dispenser #1
- dt-2 - Test Vend Dispenser #2
- dt-3 - Test Vend Dispenser #3
- dt-4 - Test Vend Dispenser #4
- SEL - Check Vend Buttons
  - Press Button #1 = SEL 1
  - Press Button #2 = SEL 2
  - Press Button #3 = SEL 3
  - Press Button #4 = SEL 4
- Lt - Activate all lights and Credit Display
- ntSt -
- ITST - Input Switch Test
- ErAn -
- Nur -
- PrT - Printer test
- AuHT - Auxiliary/Port test
- ModT - Modem Test
- RtsT - Receipt test

HIDDEN FIELDS

## MODE 6 [Fn-6] Setup

**NOTE:** The **MODE & SERVICE** Switches are located behind the door.  
 With the door opened, the display will read [Fn-1]  
 Pressing the Mode Button x 5 will display [Fn-6].  
 Pressing the Service Button once will display Pr-1. Continue the steps as needed shown below.

To set Inventory, Prices etc.. press  
 1) Service Button x 1 and hold to scroll up or  
 2) Release button, press again and hold to scroll down

- Pr-1 - Set price of column #1
- Pr-2 - Set price of column #2
- Pr-3 - Set price of column #3
- Pr-4 - Set price of column #4
- SL - Set Change limit
- BL - Set Bill limit
- EdDT - Edit Date/Time
- YY-- - Year
- MM- - - Month
- DD- - - Day
- DAY - - Day
- HH - Hour
- MM - Minute
- SS - Second

EdDT (Press and hold Mode Button to set the functions below)

- \* OP-2 - Auto Vend One Product
- \* Id-H - Machine ID (1000 - 100000)
- \* Id-L - Machine ID (1 - 999)
- \* LC-1 - Dispenser #1 low cards threshold
- \* LC-2 - Dispenser #2 low cards threshold
- \* LC-3 - Dispenser #3 low cards threshold
- \* LC-4 - Dispenser #4 low cards threshold
- \* ALEn -
- \* bF-u - Bill Acceptor full threshold
- \* bt-d -
- \* Ct - Credit time out (erases credit after 'xx' minutes)
- boot -

Curr, MDB and boot  
 Can only be displayed by pressing and holding the mode button when Id-H is displayed.

When Id-H is shown press and hold Mode Button to set Hoppers designation in MDB settings

**\* Requires Access Code to change factory settings**

**SEE NEXT PAGE**

The hidden fields below are displayed after the Id-H display.  
 Press and hold Mode Button to access these fields.

- hdUr -
- curr -
- ndb - *PRESS AND HOLD **SERVICE BUTTON** TO ACCESS THE FIELDS BELOW*
- c-c1 -
- c-nuL -
- c-U1 -
- c-U2 -
- c-U3 -
- c-U4 -
- c-U5 -
- C-11 -
- C-12 -
- C-13 -
- C-14 -
- C-15 -

- h-11 - Assign 5c coin to hopper #1
- h-12 - Assign 10c coin to hopper #1 or #2
- h-13 - Assign 25c coin to hopper #1 or #2
- h-14 - Assign 100c coin to hopper #1 or #2
- h-15 - Assign 200c coin to hopper #1 or #2

Assign coin denominations to Hopper #1 or Hopper #2

- b-c1
- bnul
- b-u1
- b-u2
- b-u3
- b-u4
- b-u5
- b-u6
- b-u7
- b-u8
- b-11
- b-12
- b-13
- b-14
- b-15
- r-nul
- rd1u
- rHEn
- r1nt
- rnbl
- ndb
- boot

**ENTERING SERIAL NUMBERS**

- \* Press the Mode Button x 5 to **Fn6**
- \* Press the Service Button 1 time to **Pr-1**
- \* Press the Mode Button and scroll to the last assigned price set. Release button.
- \* Press and hold down the Mode Button approximately for 5 - 7 seconds (**EdDT**). Release button.
- \* Press the Mode Button and scroll to **Id-h**.  
*(Setting of the first (1st) Digit of the machine's Serial Number)*
- \* Press the Service Button one time to show the current value entered.
- \* Press and hold down the Service Button to set the required value. Release Button.

**Id-H**

- \* Press the Mode Button to **Id-L**.  
*(Setting of the last 4 Digits of the Serial Number)*
- \* Press the Service Button one time to show the current value entered.
- \* Press and hold down the Service Button to set the required value.
- \* Return to **Fn-1** by pressing the Mode Button.

**Id-L**

To set Inventory, Prices etc.. **press**

- 1) Service Button x 1 and hold to scroll up or
- 2) Release button, press again and hold to scroll down

**OPAL MANUFACTURING LTD.**  
**CB/COIN HOPPER – PATH Machines**  
**Owner's Manual/Operations Guide - Rev. 1.0**  
**APRIL 2003**

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**Opal Manufacturing Ltd.**  
105 Brisbane Road., #12  
Downsview, Ontario M3J 2K6  
Tel: (416) 665-6605  
Fax: (416) 665-5631  
[www.opal.on.ca](http://www.opal.on.ca)  
e-mail: [support@opal.on.ca](mailto:support@opal.on.ca)

# TROUBLESHOOTING

SYMPTOM	POSSIBLE CAUSE	PROBABLE SOLUTION
OPVM does not power up when switched on	<ul style="list-style-type: none"> <li>- No Ac Power</li> <li>- Faulty Power cord</li> <li>- Blown Fuse</li> <li>- Defective Connection box</li> <li>- Defective Transformer Assembly</li> </ul>	<ul style="list-style-type: none"> <li>- Check AC outlet</li> <li>- Replace power cord</li> <li>- Replace fuse on connection box</li> <li>- Replace or repair connection box if power light is OFF</li> <li>- Replace or repair if output does not match ratings</li> </ul>
No Display on Power up	<ul style="list-style-type: none"> <li>- Loose Display Harness</li> </ul>	<ul style="list-style-type: none"> <li>- Check /replace display harness</li> </ul>
Bill Acceptor does not Power up	<ul style="list-style-type: none"> <li>- No AC Power</li> <li>- Defective Unit</li> </ul>	<ul style="list-style-type: none"> <li>- Check AC voltage at 9-pin connector to Bill Acceptor</li> <li>- Replace Bill Acceptor</li> </ul>
Not Dispensing	<ul style="list-style-type: none"> <li>- Breaker Tripped</li> <li>- Empty stack</li> <li>- Motor not in home position</li> <li>- Dispenser #1 connected to # 2 port, or dispenser #2 to port #1</li> <li>- Defective Dispenser</li> </ul>	<ul style="list-style-type: none"> <li>- Reset Breaker</li> <li>- Refill</li> <li>- Re-home using test vends</li> <li>- Correct by switching ports</li> <li>- Replace</li> </ul>
Dispenser empty but "EMPTY" light is off	<ul style="list-style-type: none"> <li>- Loose Connection</li> <li>- Reverse polarity</li> <li>- Defective light bulb</li> </ul>	<ul style="list-style-type: none"> <li>- Check and fix</li> <li>- Check keying on connector at vend button at back of door</li> <li>- Replace</li> </ul>

# OPAL MANUFACTURING LIMITED

## QA Procedure – Card Vending Machines

The purpose of this procedure is to ensure that the machine meets Opal standards with respect to

- Finish
- Fit
- Functionality
- Safety

A. Perform hipot dielectric test

B. Pre power up

- (1) Check dispensers connected correctly
- (2) Ensure bill acceptor connected correctly
- (3) Check - Door closes properly
  - Finish meets standard
  - No sharp edges
  - Consistent paint & plating quality
  - Proper lock functionality

C. Power up machine

- (1) Ensure bill acceptor reboots & display indicates zeroes
- (2) Set prices for columns & set up bill acceptor configuration if necessary
- (3) Test bill acceptor / coin mechanism in Fn5 bct mode
- (4) Insert at least 5 of each denomination of bill or coin for acceptance. All must be accepted within a maximum of two insertions.
- (5) Load product in each column. Minimum 25 cards per column. Set inventory in Fn3. Test vend each column using cash to purchase cards. Purchase a minimum of 10 cards per column. For acceptance 100% of product must vend successfully.
- (6) Check lights using Fn 5 lt.
- (7) Run a print report
- (8) Reset machine to zero out all sales and inventory values.
- (9) Run a print report

- All results are to be recorded on Opal Form 006A – Quality Control Test Report.
- Both printouts are to be attached to Form 006A

# OPAL'S QUALITY CONTROL TEST REPORT



<b>COMPANY:</b>		<b>DATE:</b>	
<i>Type of Machine:</i>		<b>Serial Number:</b>	
	<b>VOLTAGE</b>	<b>110V</b>	<b>240V</b>

Bill Acceptor Mfg:	Model:	SERIAL <input type="checkbox"/>	MDB <input type="checkbox"/>
Bill Acceptor S/N:	Coin Mech. #	Pulse Int. <input type="checkbox"/>	RS232 <input type="checkbox"/>
LRC S/N:	Expansion Board S/N:		
Control Board S/N:		<b>Printer Key:</b>	
Dispenser S/N 1:	Dispenser S/N 2:	Dispenser S/N 3:	<b>Door Key:</b>
Dispenser S/N 4:	Dispenser S/N 5:	Dispenser S/N 6:	<b>LRC Key:</b>
Dispenser S/N 7:	Dispenser S/N 8:		<b>Alarm Key:</b>
Computer:	S/N:		
LCD:	S/N:		
Card Reader:	S/N:		
DataTran:	S/N:		
Modem:	S/N:		
Printer:	S/N:		

		OK	FAILED	CORRECTED
<b>1. DIELECTRIC TEST</b>	Dielectric			
<b>2. POWER UP</b>	Power On			
	Sold Out Light(s) "ON"			
	Credit Display			
	Controller Boards			
	LCD			
<b>3. CONTROLLER BOARD SETUP</b>	Set Price for Column #1 - #2 - #3 - #4 - #5 - #6 - #7 - #8			
Fn-5 Diagnostic	bt - Test Bill Acceptor			
	Test Vend Dispenser #1 - #2 - #3 - #4 - #5 - #6 - #7 - #8			
Check Vend Buttons	Button #1 - #2 - #3 - #4 - #5 - #6 - #7 - #8			
	Lt - Activate all lights & Credit Display			
Fn-6 Reset Machine as per client	Set Price Column #1 - #2 - #3 - #4 - #5 - #6 - #7 - #8			
	SL - Set Change Limit			
	BL - Set Bill Limit			
	EDDT - Edit Data Time			
	OP - 1 Auto Vend for Credit Accumulation			
	OP - 2 Manual Multi Vend with Credit Accumulation			
	OP - 4 Manual Multi Vend			
	CL - Set Number of Columns			
	Id-H - Machine ID			
<b>4. KIOSK</b>	Menu Activation			
	Credit Card Test			
	Data Tran			
	Modem			
	Receipt			

**ATTACHMENT C - COST PROPOSAL FORM BAFO**

**PROPOSER NAME** Opal Manufacturing Ltd.

DESCRIPTION	Est. QTY		Per unit cost	TOTAL EST. COST
<b>(A) Ticket Dispensing Machines Purchase, Delivery &amp; Warrantee</b>				
Fully loaded per unit price as per specification	30	X	\$ 10876 *	= \$ 326280 *

NOTE: Price shall be all-inclusive including all required misc. / ancillary parts for complete installation, shipping, delivery and warrantee requirements consistent with specs contained herein.

DESCRIPTION	Est. QTY		Per Day cost	TOTAL EST. COST
<b>(B) ADDITIONAL TRAINING IF NEEDED -- (OPTIONAL)</b>				
Onsite End-User Training including all Training materials, travel & expenses	5 days	X	\$ 1200	= \$6000

DESCRIPTION	Est. QTY in hrs		Per hour cost	EST. TOTAL COST
<b>(C) ADDITIONAL (POST INSTALLATION) TECHNICAL SUPPORT IF NEEDED (OPTIONAL)</b>				
Remote - Jr. Technician / Engineer	50 hrs.	X	\$ 0	= \$ 0
Remote - Sr Technician / Engineer	25 hrs	X	\$ 0	= \$ 0
Onsite Jr. Technician / Engineer	50 hrs.	X	\$ 125	= \$ 6250
Onsite Sr Technician / Engineer	25 hrs	X	\$ 175	= \$ 4375
<b>(C) TOTAL</b>				<b>10625</b>

For Onsite personnel, hourly rate shall be all-inclusive of all travel and expenses.



  
**THE PORT AUTHORITY OF NY & NJ**

DESCRIPTION	EST. QTY of UNITS		UNIT COST PER DEVICE <sup>1</sup>				EST. TOTAL COST
<b>(D) SPARE PARTS</b>							
	30	x	\$ 3157	x	0.25	=	\$ 23678
	30	x	\$	x	0.25	=	\$
	30	x	\$	x	0.25	=	\$
	30	x	\$	x	0.25	=	\$
	30	x	\$	x	0.25	=	\$
<b>(D) TOTAL Spare Parts COST</b>							<b>23678</b>

Note - Historically, and for proposal evaluation, PATH anticipates 25% spare parts utilization. However, this figure is estimated and for evaluation purposes only

NOTE: All quantities set forth in these pricing sheets are estimated and for evaluation purposes only. Contractor will be compensated only for actual quantities provided.

**Estimated TOTAL Cost**

Purchase / Delivery / Warrantee (A)	\$ 326280 *
Optional Incremental Training (B)	\$ 6000
Total Optional Technical Support (C)	\$ 10625
Total Spare Parts (D)	\$ 23678
<b>ESTIMATED TOTAL</b>	<b>\$ 366583</b>

Additional offer to PATH in respect of RFP#17032 in response to the BAFO request:

Opal manufacturing is prepared to make the following additional offers to PATH with respect to the Ticket Dispensing Machine portion of the bid:

1. If PATH agrees to pay 50% of the machine purchase price with the Purchase Order as a deposit, and pays the balance within 15 days of delivery of the machines to PATH, Opal will offer a discount of 4% of the full machine price to be deducted off the final payment

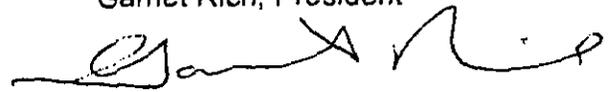
OR

\*2. If PATH elects not to pay a deposit but agrees to pay for the machines within 15 days of delivery of the machines to PATH, Opal will offer a discount of 2% of the full purchase price.

This does not apply to the spares, training or technical support portions of the contract.

Opal Manufacturing Ltd  
 Garnet Rich, President

MARCH 10/2009,



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