

52-16

VALUE ANALYSIS REPORT
ON
AUTOMATIC CLOTHES DRIER

Compiled by:

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L. T. Finch
A. D. Bentley

Schenectady, June 16, 1952

Mr. C. H. Pace
Supt. of Purch.
TRENTON WORKS

Dear Clarence:

We bring the Schenectady phase of the Value Analysis work on the
order to a close.

This interesting study has been a joint program by Bud Hoyt and
dozens others in Trenton, and Terry Finch and Al Bentley assisted
by others in Schenectady.

Of course, numerous actions and tests have been started item by
item in Trenton as the various studies included were accomplished.

Two top comments stand out in our minds about this exciting job:--

First, we are all thrilled by the opportunities developed and the
good parts presented to assist engineering, manufacturing, and
purchasing in their never-ending program of eliminating unnecessary
manufacturing costs.

Second, the job is just started. Our estimate is that the study
in Schenectady is not over one-fifth completed. Its continuation as
started in Trenton should yield the same types of results continuously.

The job in our Value Analysis study is to determine...

...which part does.

...what it costs.

...what it will.

...what it will do the job and what that costs.

In our other studies, our Value Analysis work in Schenectady
is essentially completed. However, we stand by at any
time to assist on any specific item.

Yours truly,
Purchasing Dept.

This is a Value Analysis

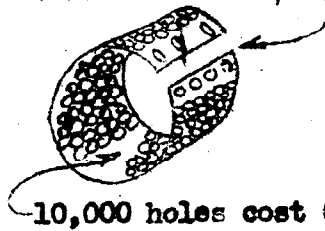
**The objective has been to remove every element of
non-functioning cost.**

**Each foreseeable "performance road block" has been
removed before listing these suggestions.**

We expect about 80% realization.

60,000/year

7 holes cost 26¢



10,000 holes cost 64¢

	Cost/M	
	<u>Material</u>	<u>Shop Cost</u>
Present	1830	1830
Proposed	<u>1240</u>	<u>1240</u>
	590	590

ESTIMATED ANNUAL SAVING--\$35,400.00

This drum screen is spot welded to the drum ends and makes up the Dryer tumbling drum.

PROPOSED:

Eliminate the end holes and use thinner gage material. The screen might be fastened to the baffle by screws through the perforations and if the holes do not line up, manually drill holes in the baffle.

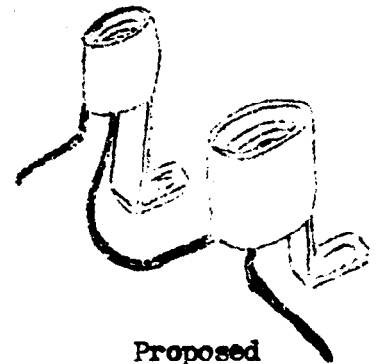
MATERIALS & PURCHASING DEPT.
VALUE ANALYSIS UNIT
April 1952

ACH:BB

Ozone and Lamp receptacles
 5378-111 and 5403552
 60,000/year



Present



Proposed

	<u>Cost/M</u>		
	<u>Material</u>	<u>Adj. labor</u>	<u>Shop Cost</u>
Present			
Lamp receptacle	130.00		
4 screws	12.00		
Ozone receptacle	185.00		
Terminal	23.50		
Wire & terminal assem.	69.00	10.60	
	<u>419.50</u>	<u>10.60</u>	461.50
Proposed			
Harness assem.	180.00		
2 screws	6.00		
Terminal	23.50		
	<u>209.50</u>		214.00

ESTIMATED ANNUAL SAVINGS -- \$11,850.00

These two receptacles hold the ozone bulb and the 40 W bulb.

PROPOSED:

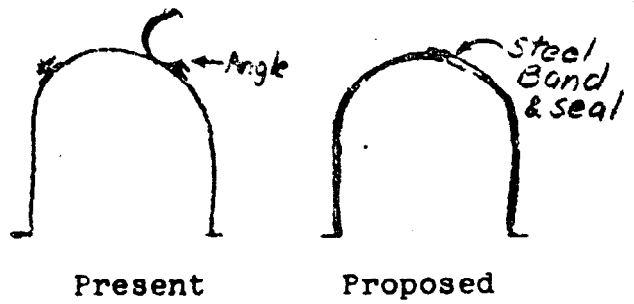
These receptacles may be purchased in a harness arrangement from a different vendor. In addition to the indicated savings there will be significant savings in the assembly time.

MATERIALS & PURCHASING DEPT.
 VALUE ANALYSIS UNIT
 May 1952

AGH:BB

1AD7A3 Clothes Dryer Value Analysis

Wrap Around Assembly
 Method of Clamping
 60.000/year



	Cost/M		
	Material	Adjusted Labor	Shop Cost
Present	300.00	157.30	795.30
Proposed	71.40	31.70	171.30
	228.60	125.60	624.00
ESTIMATED ANNUAL SAVING	13,716.00	7,536.00	37,440.00

PROPOSED:

Eliminate the following parts and operations:

N44P21028B	Screw	39.00	
N405P41C	Lockwasher	6.00	
N203P2113	Nut Hex	15.00	
5404347	Wrapper Angle	224.70	48.44
	Riveting		29.57
1/8 x 3/16	Rivets	10.00	
Clamping Assembly Time (Est.)			36.00

Replace with steel banding as used for box reinforcing.

Bands and Seals	70.00	
Pierce and Part		10.00
Assembly Time (Est.)		13.00

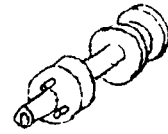
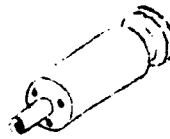
MATERIALS & PURCHASING DEPT.
 VALUE ANALYSIS UNIT
 February 1952

LTF:AEM

K-5403332
 Motor Pulley
 50,000/year

PRESENT

60+



PROPOSED 23 4

	Cost/M		
	<u>Material</u>	<u>Adjusted Labor</u>	<u>Shop Cost</u>
Present			
Material			
Pulley	537.68	4.30	
3 screws	13.77		
Assembly		11.75 *	
	<u>\$551.45</u>	<u>\$16.05</u>	<u>602.20</u>
Proposed			
Material			
Die casting	216.20		
Assembly		3.40 *	226.92

Estimated annual savings----- \$22,516.00

Comments:

The present pulley is a screw machine part of special design to which a seven inch fan is attached with three screws.

Proposed:

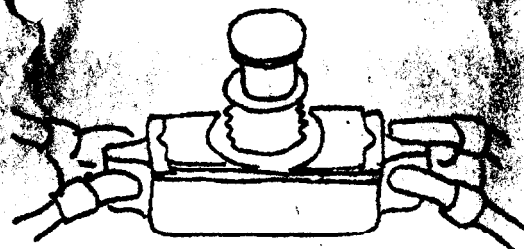
Utilize a die cast part having three studs to support the fan. In assembly, the fan is located over the studs and peened in place.

Tool Charge--\$2150.00

* Estimated

ADB:MWE

5425058
Push Button Switch
60,000/year



	<u>Cost/M</u>		
	<u>Material</u>	<u>Adjusted Labor</u>	<u>Shop Cost</u>
Present	728.00		728.00
Proposed	---		----
			<hr/>
			728.00

ESTIMATED ANNUAL SAVINGS-- \$43,680.00

COMMENTS:

The push button switch is actuated by opening the door to stop the motor, if running, and to illuminate the interior of the drier.

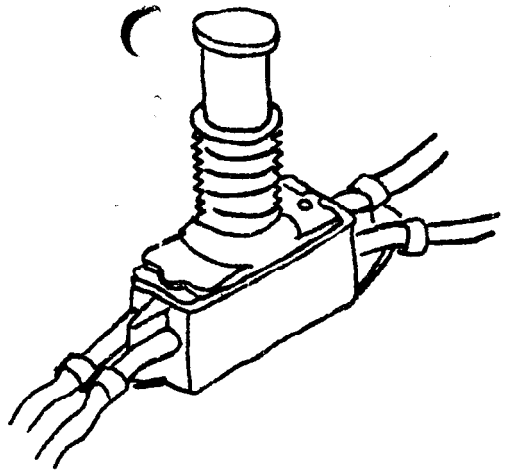
PROPOSED:

The switch seems to have been included as a sales aid since the drier would function without it. With present market conditions, it is suggested that the part be temporarily eliminated with the resulting savings of \$875 each week.

MATERIALS & PURCHASING DEPT.
VALUE ANALYSIS UNIT
June 1952

ADB:AEM

5425058
Push Button Switch
60,000/year



	<u>Cost/M</u>		
	<u>Material</u>	<u>Adjusted Labor</u>	<u>Shop Cost</u>
Present	728.00		728.00
Proposed	559.00		<u>559.00</u>
			169.00

ESTIMATED ANNUAL SAVINGS-- \$10,140.00

COMMENTS:

The push button switch is actuated by the door to control the motor and light.

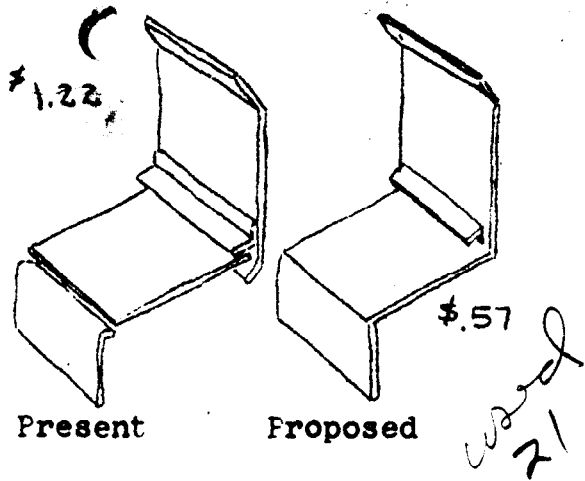
PROPOSED:

Purchase a vendor's standard part.

MATERIALS & PURCHASING DEPT.
VALUE ANALYSIS UNIT
June 1952

ADB: AEM

5402548
 5402559
 5402561
 Air Baffle
 60,000/year



	Cost/M		
	Material	Adjusted Labor	Shop Cost
Present			
Three major parts,			
Three minor parts	640.00	183.50	1220.00
Proposed			
Single part, formed			
and stamped	573.00		<u>573.00</u>

~~647.00~~

ESTIMATED ANNUAL SAVINGS-- \$38,800.00

COMMENTS:

The baffle forms a duct to guide air from the intake fan to the heater element.

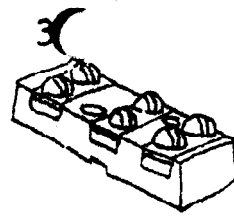
PROPOSED:

The present assembly of six parts may be replaced by a single stamping. Tool charge--\$3,500.00

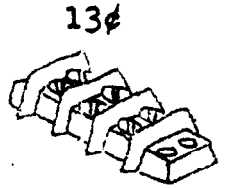
MATERIALS & PURCHASING DEPT.
 VALUE ANALYSIS UNIT
 May 1952

ADB:AEM

5440640
Terminal Block
60,000/year



Present



Proposed

	Cost/M		
	<u>Material</u>	<u>Adjusted Labor</u>	<u>Shop Cost</u>
Present			
Special part	321.00		321.00
Proposed			
Vendor's part	126.00		<u>126.00</u>
ESTIMATED ANNUAL SAVING--	\$11,700.00		195.00

COMMENTS:

The present terminal block is being specially molded for the drier.

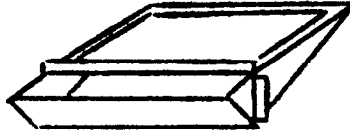
PROPOSED:

A vendor's standard part will perform same function.

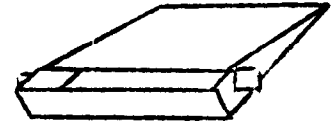
MATERIALS & PURCHASING DEPT.
VALUE ANALYSIS UNIT
May 1952

ADB:AEM

Lint Trap Assm
 5404427
 60,000/year



Present



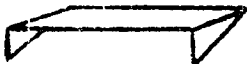

Proposed

	Cost/M		Shop Cost
	Material	Labor	
Present	948.00		948.00
Proposed	440.00	40.00	480.00
			468.00

ESTIMATED ANNUAL SAVINGS--\$28,080.00

This lint trap filters the exhaust air and also directs the air flow upward.

PROPOSED

Make the lint trap from just two pieces, eliminating the bottom of the trap. The screen could be made of perforated metal formed like this -  The air baffle which also is used as the handle could be formed from a stamping like this - 

The two parts could be spot welded together at these two points.

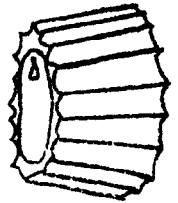
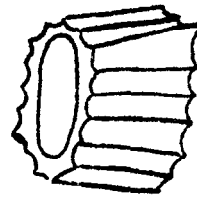
MATERIALS & PURCHASING DEPT.
 VALUE ANALYSIS UNIT
 April 1952

AGH:BB:M

5402500
Control Knob
120,000/year

12¢

3¢



Present

Proposed

Cost/M

	<u>Material</u>	<u>Adjusted Labor</u>	<u>Shop Cost</u>
Present			
Knob for drier thermostat	122.00		122.00
Proposed			
(a) Knob for refrigerator	33.50		
(b) Special shaft*	30.00		
			<u>63.50</u>
			58.50

ESTIMATED ANNUAL SAVINGS- \$7,020.00

COMMENTS:

Present knobs are molded especially for the drier time and heat controls.

PROPOSED:

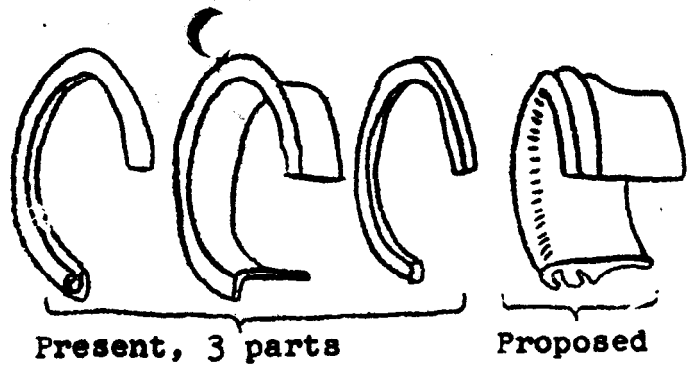
Use the high production knob now used on the refrigerator.

*Estimate of cost for special shaft comes from supplier of thermo-static control.

MATERIALS & PURCHASING DEPT.
VALUE ANALYSIS UNIT
May 1952

ADB:AEM

5406318
 Loading Ring Assembly
 60,000/year



	Cost/M		
	<u>Material</u>	<u>Adjusted Labor</u>	<u>Shop Cost</u>
Present			
Door Gasket	243.00		243.00
Felt Gasket	190.00		190.00
Loading Ring	632.00	223.50	1339.00
Eyelets	17.85		17.85
Gasket Adhesive	15.30		15.30
			<u>1805.15</u>
Proposed			
Rubber Extrusion	942.50		<u>942.50</u>
			862.65

ESTIMATED ANNUAL SAVINGS--\$51,760.00

COMMENTS:

The parts listed are presently used to obtain an air seal between the housing and inner liner and as a guide for placing clothing in drier drum.

PROPOSED:

The function of these parts seems to be accomplished by a single rubber extrusion. Tool cost--\$230.00. Additional annual savings of \$10,560 available if extrusion is cut to length but not joined to form ring.

MATERIALS & PURCHASING DEPT.
 VALUE ANALYSIS UNIT
 May 1952

ADB:AEM

5404369
Spring
60,000/year



	Cost/M	
	<u>Material</u>	<u>Shop Cost</u>
Present		
Material with special form	89.10	89.10
Proposed		
Material, Oil tempered-- conventional form	29.17	29.17

ESTIMATED ANNUAL SAVINGS-- \$3596.00

COMMENTS:

This spring maintains tension on the drum drive belts.

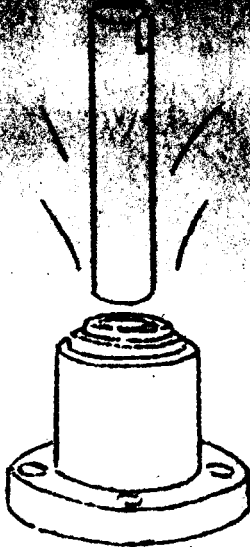
PROPOSED:

Replace present spring with one of more conventional design wound from oil tempered steel. Prices from \$26.20 to \$31.70 per M. Second proposal uses plano wire in conventional design with prices from \$42.85 to \$48.20 per M.

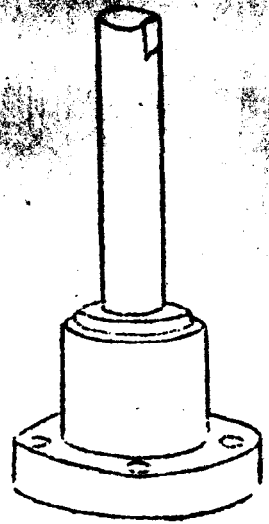
MATERIALS & PURCHASING
VALUE ANALYSIS UNIT
April 1952

ADB:AEM

Drum Hub & Shaft As'm.
60,000/year



Present



Proposed

	Cost/H		Shop Cost
	Material	Adjusted Labor	
Present			
hub	816.00		816.00
shaft	128.00	28.40	215.00
assembly		27.30	<u>86.30</u>
			1120.30
Proposed			
die casting	197.00		197.00
shaft	128.00	40.00	254.00
machine assembly		55.20	<u>174.00</u>
			625.00

ESTIMATED ANNUAL SAVINGS — \$29,718.00
tooling — \$2,390.00

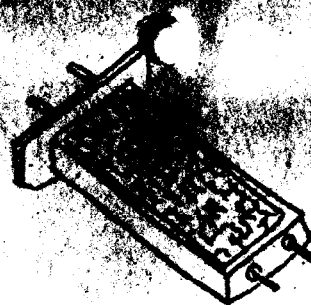
The hub and shaft assembly is riveted and swaged to the drum rear head. It provides for rotation and support of the tumbling drum.

PROPOSED:

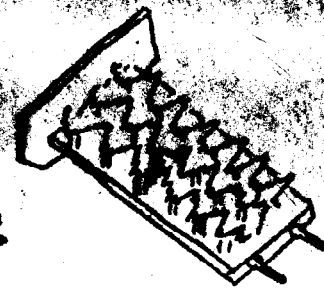
Die cast the hub with the shaft as an insert. Two flats would be broached on the shaft about 1/4 inch from the end. With these two flats the shaft would be securely locked in the die casting. It would be necessary to clean up the flash on the shaft just above the hub and possibly a profiling operation would be required on the base of the casting to keep within the eccentricity tolerance required.

MATERIALS & PURCHASING DEPT.
VALUE ANALYSIS UNIT
May, 1952

5406117
5402531
Heater Screen
60,000/year



Present



Proposed

	<u>Cost/M</u>		
	<u>Material</u>	<u>Adjusted Labor</u>	<u>Shop Cost</u>
Present Screen on Heater	570.00	53.80	740.00
Proposed Eliminate Screen			
ESTIMATED ANNUAL SAVINGS-- \$44,400			

COMMENTS:

A screen is now being used to prevent lint from collecting in the heater assembly.

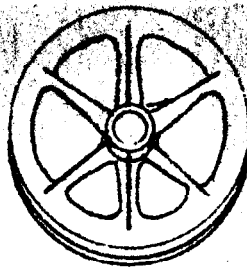
PROPOSED:

Remove the screen; also remove heater sides so that incoming air will keep unit free from lint. This construction will also reduce quantity of sheet metal required.

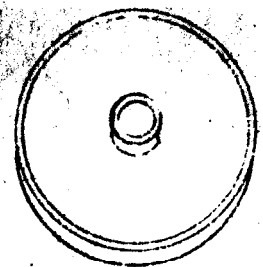
MATERIALS & PURCHASING DEPT.
VALUE ANALYSIS UNIT
May 1952

ADB:AEM

5406355
Drum Pulley
60,000/year



Present



Proposed

	Cost/M	
	<u>Material</u>	<u>Adjusted Labor</u> <u>Shop Cost</u>
Present		
Die Cast Sheave	742.50	742.50
Proposed		
Stamped Metal Part	630.20	<u>630.20</u>
		112.30

ESTIMATED ANNUAL SAVINGS- \$6,738.00

COMMENTS:

The drum pulley is located on the drum shaft and is a part of the speed reduction drive system.

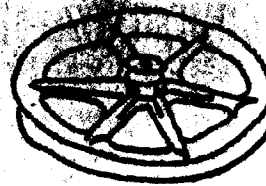
PROPOSED:

Replace the die cast part with a metal stamped sheave. No tool charge.

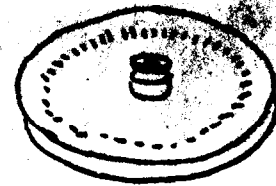
MATERIALS & PURCHASING DEPT.
VALUE ANALYSIS UNIT
May 1952

ADB:AEM

5406360
Idler Pulley
60,000/year



Present



Proposed

	<u>Cost/M</u>		
	<u>Material</u>	<u>Adjusted Labor</u>	<u>Shop Cost</u>
Present			
Die cast sheave with screw machine pulley	928.00		928.00
Proposed			
Stamped part from vendor	815.00		815.00
			113.00

ESTIMATED ANNUAL SAVING-\$6,780

COMMENTS:

The idler pulley is part of the speed reduction drive which supplies power to the drum.

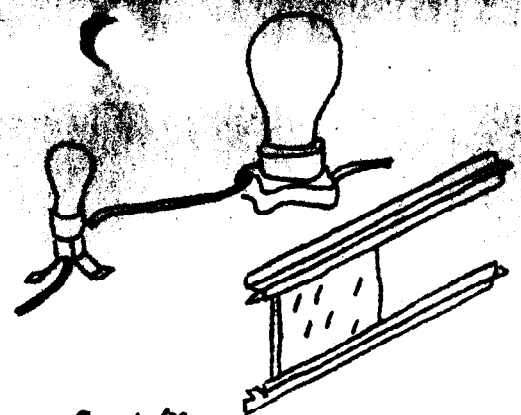
PROPOSED:

Replace the present die cast sheave with a stamped metal part.
No tool charges.

MATERIALS & PURCHASING DEPT.
VALUE ANALYSIS UNIT
May 1952

ADB:AEM

Ozone Lamp and
Interior Light
60,000 each/year



	Cost/M		
	<u>Material</u>	<u>Adjusted Labor</u>	<u>Shop Cost</u>
Present			
Ozone lamp and lamp holder assembly	900.00	29.20	992.30
Forty watt lamp and lamp holder assembly	206.00		206.00
Window and window guide assembly	150.00	17.70	<u>206.00</u>
			1404.30
Proposed	---	--	---

ESTIMATED ANNUAL SAVINGS-- \$84,260

COMMENTS:

The parts and costs listed are those necessary for the inclusion of the ozone bulb and interior illuminating lamp for the drier.

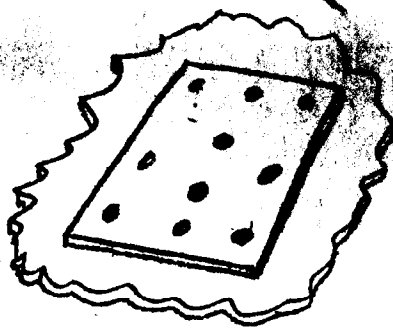
PROPOSED:

These parts should be eliminated since their function is to promote sales. Under present marketing conditions, the removal of these items would result in an estimated saving of \$1,700 each week and should cause no loss of volume.

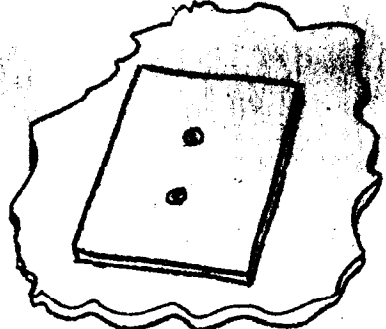
MATERIALS & PURCHASING DEPT.
VALUE ANALYSIS UNIT
June 1952

ADB: AEM

5404390
 Reinforcing Plate
 60,000/year



Present



Proposed

	Cost/M		
	Material	Adjusted Labor	Shop Cost
Present (spot welding)		53.30	168.00
Proposed (eliminate)	--	--	--
			<hr/> 168.00

Estimated Annual Saving----- \$10,080.00

PROPOSED:

This plate reinforces the base plate beneath the motor saddle.

After assembly, this plate is clamped tightly against the motor saddle by the motor mounting bolts. Therefore, it should be unnecessary to spot weld the plate to the base.

MATERIALS & PURCHASING DEPT
 VALUE ANALYSIS UNIT
 March 1952

LTF:AEM

1AD7A3 CLOTHES DRYER VALUE ANALYSIS

Heater Assembly
5405716-1
60,000/year



	Cost/M		
	Material	Adjusted Labor	Shop Cost
Present	2155.00	544.00	3866.00
Proposed	1540.00	211.00	2205.00
	615.00	333.00	1661.00
ESTIMATED ANNUAL SAVINGS	36,900.00	19,980.00	99,660.00

PROPOSED:

A textile manufacturer can weave resistance heating elements into a high temperature glass cloth. Thus, a self-supporting, self-insulating element is obtained which can be held in the heater assembly by means of a light frame around the edges. (Such a design is shown by accompanying sketch DRY-1)

Using this element, it should be possible to eliminate completely the following parts and operations:

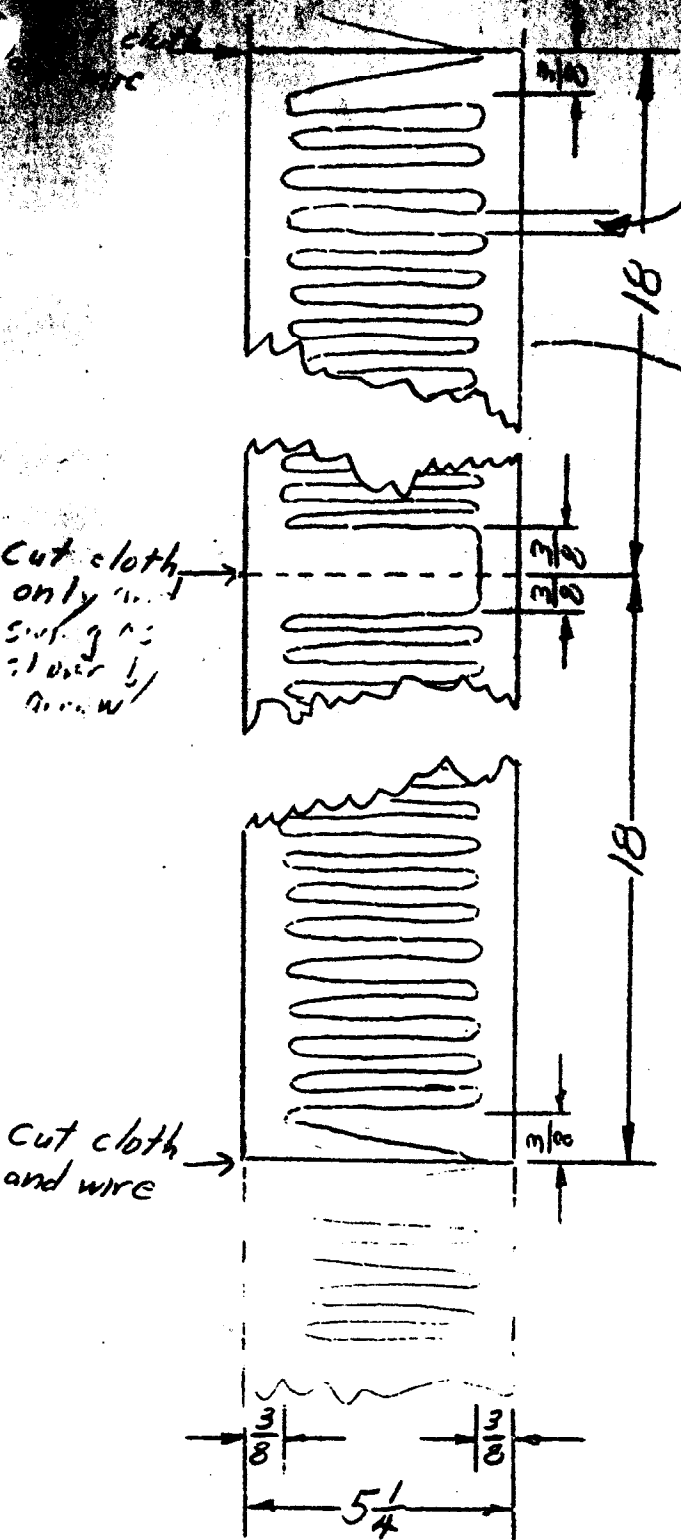
N101P1508B5	Screws (9)
5404392	Spacer
5406359	Heater Plate
5404352	Coil Supports
5406117-1	Operations--10 & 20
5404358-2	Heater Screen Edging
5404358-1	Heater Screen Edging
5404336	Heater Screen
5404365	Heater Coil
5405716	Operations 20 & 30

For the above parts and operations, is substituted the glass element assembly at an estimated cost of \$1.00.

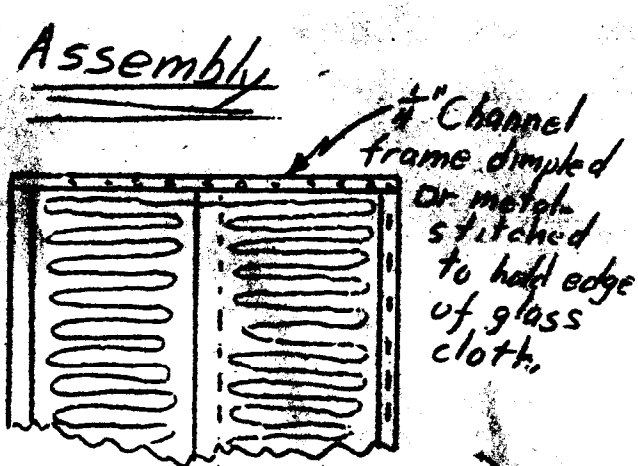
MATERIALS & PURCHASING DEPT.
VALUE ANALYSIS UNIT
February 1952

LTF:AEM

Coated Glass Cloth Heating Element for Dryer



Approx. 108 ft. #15 Cromax wire (Driver-Harris) 1/8" spacing (approx. 4.4 kW)



1/4" over lap; cloth stitched or stapled together.

Sketch - DRY-1
LTF 1952

1-5404392
Spacer Bushings
100,000/year

Present $9\frac{1}{2}\phi$



proposed 2ϕ

Washer
21

	Cost/M		
	<u>Material</u>	<u>Adjusted Labor</u>	<u>Shop Cost</u>
Present			
Material			
Steel tube	4.46		
Cut to length		1.68	9.48
Proposed			
Material			
Washer	1.80		1.84

Estimated Annual Savings: \$4,120.00

Comments:

This spacer supports inner liner of the heater assembly.

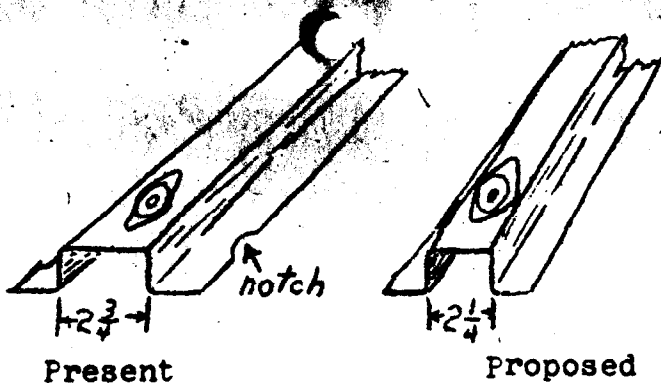
Proposed:

Spacer is now cut from seamless steel tubing and should be replaced with stamped washer.

The elimination of this part by forming the inner plate would effect still greater savings in material and labor. It is our understanding that this change is being considered for use in future models.

ADB:MWE

M-5406116 (A420)
 Base Channels
 120,000/year



	Cost/M		
	Material	Adjusted Labor	Shop Cost
Present			
Material	200.00		200.00
Pierce and notch		6.54	20.60
			<hr/>
			220.60
Proposed			
Material	179.00		179.00
Pierce only		2.18	6.87
			<hr/>
			185.87
			<hr/> <hr/>
			34.73

Estimated Annual Saving (Front and Rear Channel)-----\$4,167.00

PROPOSED:

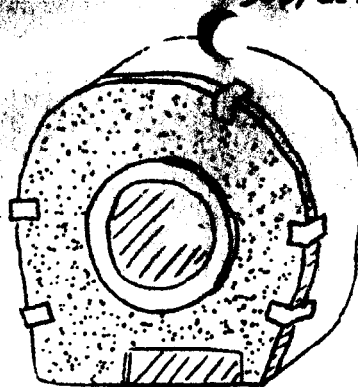
These channels strengthen the base and hold the leveling feet. They are presently being notched to provide tolerance clearance for screws which protrude through the base.

Make the channels narrower and eliminate the notching as shown. Since most of the stiffening is accomplished by the vertical section, negligible strength will be lost.

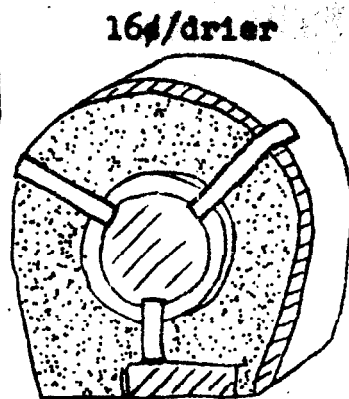
MATERIALS & PURCHASING DEPT.
 VALUE ANALYSIS UNIT
 March 1952

LTF:AEM

5404356
 Insulation Clips
 60,000/year



Present



Proposed

	Cost/M Driers		
	<u>Material</u>	<u>Adjusted Labor</u>	<u>Shop Cost</u>
Present			
Insulation held by tabs welded in place	22.00	177.00	582.00
Proposed			
Use heat resistant tape	100.00	20.70	<u>165.40</u>
			416.60

ESTIMATED ANNUAL SAVINGS--\$25,000

COMMENTS:

Steel tabs are cut and welded in place to secure insulation to inner housing.

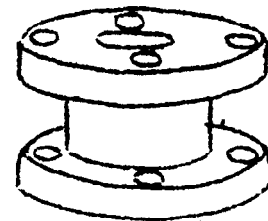
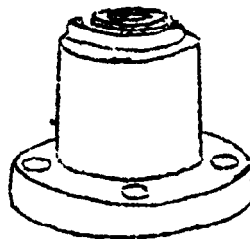
PROPOSED:

Eliminate the tabs. Hold the insulation in place with thermo-setting tape. A second approach is the use of a liquid adhesion either sprayed or brushed on housing.

MATERIALS & PURCHASING DEPT.
 VALUE ANALYSIS UNIT
 May 1952

ADB:AEM

Drum Hub
 5402327
 60,000/year



Present

Proposed

	Cost/M		Shop Cost
	Material	Adjusted Labor	
Present	816.00		816.00
Proposed	102.00	165.00*	<u>402.00*</u>
			414.00

ESTIMATED ANNUAL SAVINGS -- \$24,810.00

*estimated

The hub is the mechanism which couples the shaft to the tumbling drum head.

PROPOSED:

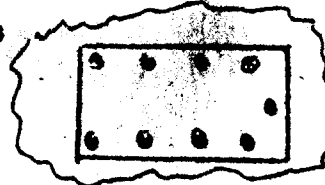
Purchase the drum hub as a grey iron casting. It could be like a spool so that it could be fastened to both panels of the drum head by rivets and blind rivets.

MATERIALS & PURCHASING DEPT.
 VALUE ANALYSIS UNIT
 May, 1952

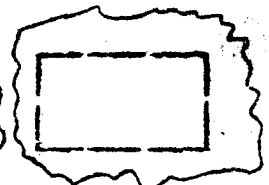
AGH:EB

1AD7A3 Clothes Dryer Value Analysis

Provisions for Duct Adapter
60.000/year



Present



Proposed

	Cost/M		
	Material	Adjusted Labor	Shop Cost
Present	118.50	10.24	155.49
Proposed	---	---	---
	118.50	10.24	155.49
ESTIMATED ANNUAL SAVING	7110.00	614.00	9329.00

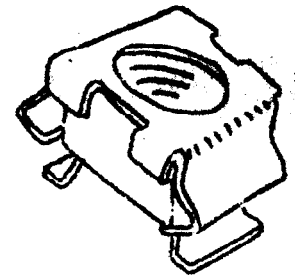
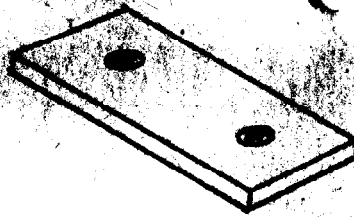
PROPOSED:

At present, provision is being made for the installation of a special duct to exhaust the humid air to the outdoors. This is done by punching a hole in the cabinet back and the housing back and then re-sealing this hole with a screwed on cover plate. Instead, let's use the same technique used on electrical junction boxes wherein "knock-outs" are provided. Punch the hole in the cabinet and housing back, part way through leaving small tabs to hold the blank in place. The installer can then knock it out completely when installing the auxiliary duct system.

MATERIALS AND PURCHASING DEPT.
VALUE ANALYSIS UNIT
February 1952

LTF:AEM

K-5401329
Nut Plate
60,000/year



	Cost/M		
	<u>Material</u>	<u>Adjusted Labor</u>	<u>Shop Cost</u>
Present	47.80	23.60	122.30
Proposed	29.80		<u>29.80</u>
			92.50

ESTIMATED ANNUAL SAVINGS--\$5550.00

COMMENTS:

This part is located beneath the base plate and in conjunction with two bolts, secures the lower end of the drum support.

The forces exerted by this support are down and to the rear and it is restrained by the shear strength of the bolts.

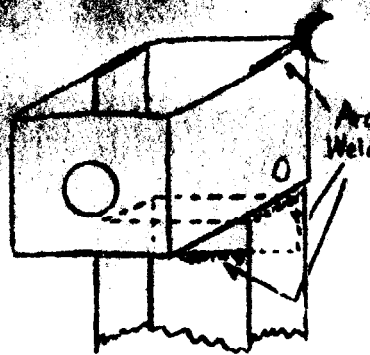
PROPOSED:

Replace the nut plate with two Tinnerman Speed Grips No. C7953-5618-27. This would require piercing a square hole and embossing instead of piercing a round hole. Possible die charge of \$500.

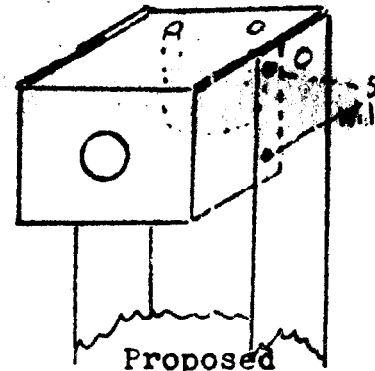
MATERIALS & PURCHASING DEPT.
VALUE ANALYSIS UNIT
April 1952

ADB:M

**Drum Support Assembly
Fabrication
60,000/year**



Present



Proposed

PRESENT METHOD:

	<u>Material</u>	<u>Direct Labor</u>	<u>Shop Cost</u>
5406354 Drum Support Assembly		270.94	
5406320 Drum Support	239.40	12.50	
5400447 Drum Bearing Hanger	85.44	17.55	
5400448 Adj. Block Support	19.82	4.54	
	<u>344.66</u>	<u>305.53</u>	<u>1681.00</u>

PROPOSED METHOD:

Drum Support Assembly (Eliminate operations 10, 30)		181.94	
Drum Support	300.00		
Notch		10.00	
Pierce		15.00	
Form		10.00	
2nd Form		5.00	
Final Form		5.00	
Spot Weld		15.00	
	<u>300.00</u>	<u>241.94</u>	<u>1358.00</u>
	<u>44.66</u>	<u>63.59</u>	<u>323.00</u>

ESTIMATED ANNUAL SAVINGS

\$19,380.00

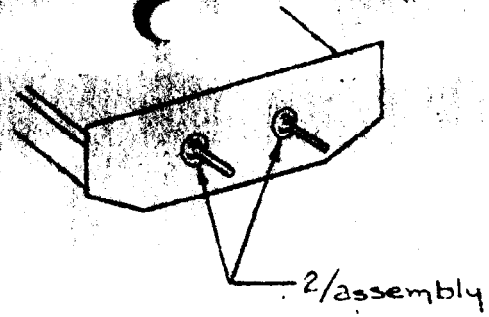
PROPOSED:

The drum support assembly supports the entire weight of the clothes and drum in a cantilever fashion. At present it is made by arc welding three parts together. By using only one part and forming as shown, it should be possible to maintain function while making the above saving. The "U" bolt has been inverted eliminating the adjusting block support and making the "U" bolt nuts more accessible. The brace and clip assembly may now be spot welded instead of arc welded.

**MATERIALS & PURCHASING DEPT.
VALUE ANALYSIS UNIT
March 1952**

LTF:AEM

Washer
120,000/year



	Cost/M		
	<u>Material</u>	<u>Adjusted Labor</u>	<u>Shop Cost</u>
Present	\$17.00		17.35
Proposed:			
#1 - Brass	\$ 9.60		9.80
#2 - Steel	1.80		1.84

Estimated annual Saving: 1st proposal - \$910.00
 2nd proposal - \$1860.00

Comments:

At present this washer is being made of brass and is used at the electrical terminals of the heater assembly.

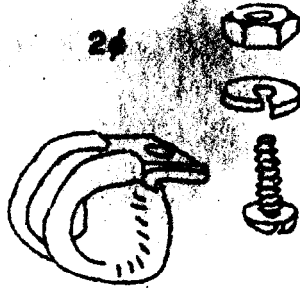
Proposed:

This washer may be bepurchased in brass from an outside vendor with a saving as shown under proposal No. 1.

If the present brass washer were to be replaced by steel the attendant cost redvition per year is shown as proposal No. 2.

ADB:VLT

H. P. 755-4
 Cable Hanger
 120,000/year



Present



Proposed

	Cost/M		
	<u>Material</u>	<u>Adjusted Labor</u>	<u>Shop Cost</u>
Present			
Clamp	18.35		
Screw	2.55		
Washer	.51		
Nut	1.53		
			22.94
Proposed			
Spring Steel Cable Clip	5.97		<u>5.97</u>
			16.97

ESTIMATED ANNUAL SAVINGS-\$2,036.00

COMMENTS:

The wiring harness is secured to the terminal block by two sets of hangers each of which consist of an insulated band of metal, one screw, one lock washer, one nut, and the extra labor and parts handling which is necessary.

PROPOSED:

Support the cable with two speed fasteners. An additional saving of \$716 is obtainable if the cable is supported by one speed clamp instead of the present two.

MATERIALS & PURCHASING DEPT.
 VALUE ANALYSIS UNIT
 May 1952

ADB:AEM

K-5402336
Eyelet
420,000/year

Present---.25¢ each



Proposed---.082¢ each

	Cost/M		
	<u>Material</u>	<u>Adjusted Labor</u>	<u>Shor Cost</u>
Present	17.85	.	17.85
Proposed	<u>5.85</u>		<u>5.85</u>
	12.00		12.00

Estimated Annual Saving-----\$720.00

PROPOSED:

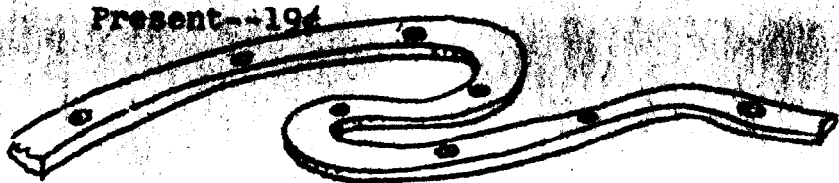
This eyelet is used to hold the felt gasket in place around loading ring and to provide spacing between cabinet front and dryer housing.

A standard eyelet can be obtained which is very close in size to the one now used but at the price shown above.

MATERIALS & PURCHASING DEPT.
VALUE ANALYSIS UNIT
March 1952

ACJ:LTF:AEM

5404374
 Felt Gasket
 60,000/year



Proposed--10¢

	Cost/M		
	<u>Material</u>	<u>Adjusted Labor</u>	<u>Shop Cost</u>
Present	190.00		190.00
Proposed	<u>96.80</u>		<u>96.80</u>
	93.20		93.20

Estimated Annual Saving-----\$5592.00

PROPOSED:

This gasket makes the seal between the cabinet front and the housing to prevent air and lint leakage. Present gasket is made of A2H5D6 material.

The proposed price could be achieved by using A2H5D5 material in place of the above. Vendors quote other prices as follows in 30,000 lots:

	<u>A2H1D5</u>	<u>A2H5D5</u>	<u>A2H5D6</u>
Vendor #1	91.09	91.09	122.81
Vendor #2	107.15	112.23	183.32
Vendor #3	138.20		176.65

MATERIALS & PURCHASING DEPT.
 VALUE ANALYSIS UNIT
 March 1952

LTF: AEM

Present 1.20¢

Fibre Washer
K-5404353
60,000/year



Proposed .65¢

Present
Proposed

	Cost/M	
	<u>Material</u>	<u>Shop Cost</u>
Present	12.05	12.05
Proposed	<u>6.57</u>	<u>6.57</u>
	5.48	5.48

ESTIMATED ANNUAL SAVING-- \$329.00

This washer insulates the thermodisc from the dryer wrapper.

PROPOSED:

Several sources for this washer have been found with prices ranging from \$6.45/M to \$8.10/M but with different materials. These materials should be investigated to see the resultant saving which can be achieved.

MATERIALS & PURCHASING DEPT.
VALUE ANALYSIS UNIT
April 1952

LTF:ACJ:AEM

Present .32¢ ea.

Fibre Washer
K-5404354
120,000/year

Proposed .098¢ ea.

	Cost/M	
	<u>Material</u>	<u>Shop Cost</u>
Present	6.52	6.52
Proposed	<u>1.96</u>	<u>1.96</u>
	4.56	4.56

ESTIMATED ANNUAL SAVINGS--\$547.00

This washer is used to insulate the screws which hold the protective thermodisc in place.

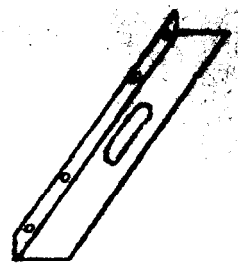
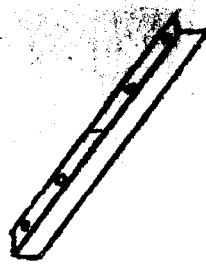
PROPOSED:

Several sources have been found for these washers ranging in price from \$.96/M to \$1.21/M. There was, however, a variation in materials quoted upon. It would be wise, therefore, to investigate these alternate materials as the greatest cost reduction may be made through their use.

MATERIALS & PURCHASING DEPT.
VALUE ANALYSIS UNIT
April 1952

LTF:ACJ:AEM

M-5404421
 Housing Back Brace
 60,000/year



Proposed

Present

	Cost/M		
	Material	Adjusted Labor	Shop Cost
Present	89.91	19.30	150.91
Proposed	65.40	14.50	111.22
			<u>39.69</u>

ESTIMATED ANNUAL SAVINGS--\$2,378.00

COMMENTS:

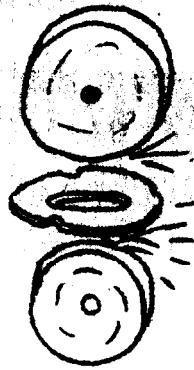
This housing back brace is part of the drum support assembly. It is presently made from .078" x 2-1/16" wide C. R. Steel.

We feel that this brace made from 1-1/2" wide material shortening the long leg by 9/16" would not lessen the rigidity of the assembly any appreciable amount. This change would allow the U-bolt to be assembled without notching the brace.

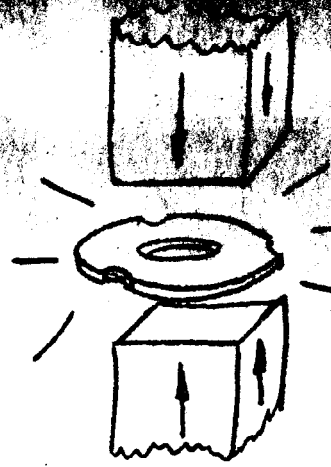
MATERIALS & PURCHASING DEPT.
 VALUE ANALYSIS UNIT
 March 1952

DLE:LTF:AEM

5404371
 Pulley Thrust Washer
 6,000/year



Present



Proposed

21
used

	Cost/M	
	Material	Adjusted Labor
		Shop Cost
Present--Grind Flat	16.30	51.40
Proposed--Plannish	2.11	6.65
	14.19	44.75

Estimated Annual Saving-----\$2,685.00

PROPOSED:

This thrust washer provides a wear surface between the drum pulley and the drum bearing. It is now ground on both sides to make it flat.

This washer should be plannish as is the similar thrust washer (5404346) used between the drum and drum bearing.

LATEST WORD

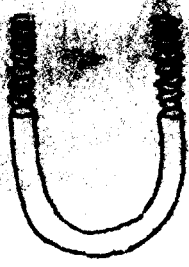
This part may be purchased from vendor for \$7.73/M

ESTIMATED ANNUAL SAVING-- \$3,110.00

MATERIALS & PURCHASING DEPT.
 VALUE ANALYSIS UNIT
 March 1952

LTF:AEM

1/2" Bolt
54023-03
60,000/year



	<u>Material</u>	<u>Cost/M</u>	<u>Shop Cost</u>
Present		53.45	53.45
Proposed		22.03	22.03
			<u>31.42</u>

ESTIMATED ANNUAL SAVINGS - \$1,885.20

This bolt clamps the bearing housing in position.

PROPOSED:

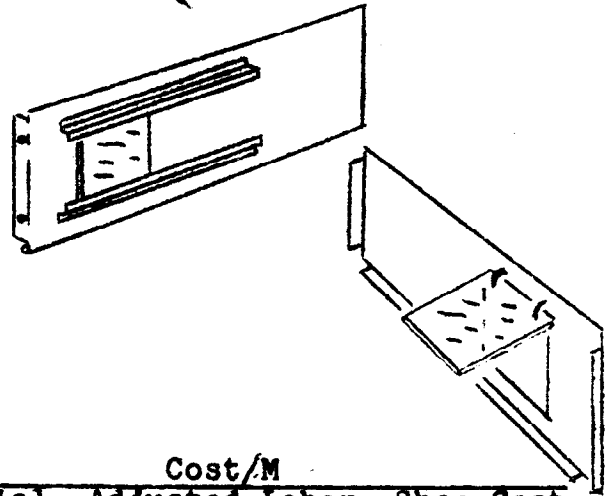
Purchase the "U" bolt from a different specialty supplier. He will zinc plate the bolt for \$4.40/M.

MATERIALS & PURCHASING DEPT.
VALUE ANALYSIS UNIT
May 1952

AGH.BB



5400458
 Window Guide
 60,000/year



	Cost/M		
	<u>Material</u>	<u>Adjusted Labor</u>	<u>Shop Cost</u>
Present	17.60	17.50	72.90
Proposed			
Wire Form	3.88		<u>3.96</u>
			68.94

ESTIMATED ANNUAL SAVINGS-- \$4,136.00

COMMENTS:

The plexiglass window allows the interior light to be placed on the intake side of the air baffle. This window may be opened for replacement of the bulb.

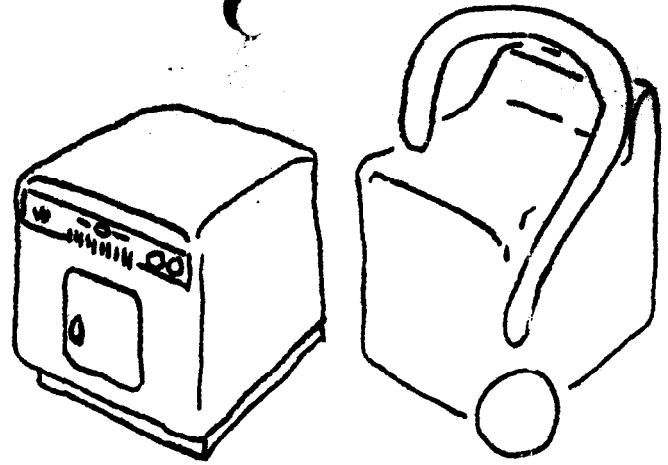
PROPOSED:

The window guide could be replaced by a formed wire hinge. Thinner plexiglass may be used which should more than off-set the additional cost of punching. Tool cost-\$560.00

MATERIALS & PURCHASING DEPT.
 VALUE ANALYSIS UNIT
 June 1952

ADB:AEM

Automatic Clothes Drier
60,000/year



	<u>Material</u>	<u>Adjusted Labor</u>	<u>Shop Cost</u>
Present Cost/M	58,340.00	11,670.00	95,240.00
Cost/Year	3,500,400.00	700,200.00	5,714,400.00

Proposed
Continue and intensify Value Analysis

ESTIMATED ANNUAL SAVINGS--\$1000 for every \$100 spent, on Value Analysis.

COMMENTS:

Value Analysis of the automatic clothes drier has been started. The proposed savings on the few items studied have been listed in the following sheets.

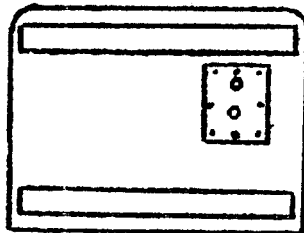
PROPOSED:

Continuing Value Analysis of the drier should be established to aid in the production of a quality product. Each and every component of material and design must satisfactorily answer the questions, "Does it improve the function; does it increase the sales?"

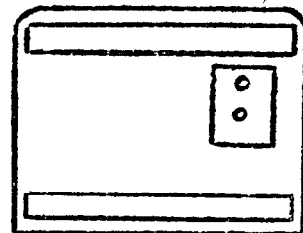
MATERIALS & PURCHASING DEPT.
VALUE ANALYSIS UNIT
June 1952

ADB:AEM

5406366
Base Assembly
30,000/year



Present



Proposed

	Cost/M	
	<u>Material</u>	<u>Ad justed Labor Shop Cost</u>
Present	350.00	1105.00
Proposed	300.00	<u>950.00</u>
		155.00

ESTIMATED ANNUAL SAVINGS--\$4650.00

COMMENTS:

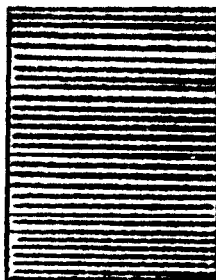
This base assembly consists of two channels and a motor reinforcing plate spot welded to the base and the painting of the assembly.

We do not feel that the spot welding of this reinforcing plate to the base is necessary as the plate is bolted to the base when assembling the motor. The above savings can be realized by eliminating this operation.

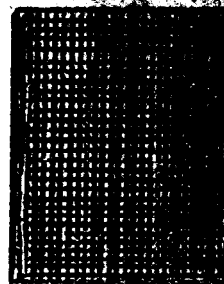
MATERIALS & PURCHASING DEPT.
VALUE ANALYSIS UNIT
February 1952

LTF:DLE:AEM

24" x 30"
 Corroflex (35 lb.)
 30,000/year



Present



Proposed

	Cost/M	
	Material	Adjusted Labor
Present	50.20	50.20
Proposed	21.40	21.40
		28.80

ESTIMATED ANNUAL SAVINGS--\$864.00

This sheet of corroflex paper is used to wrap the lint trap.

COMMENTS:

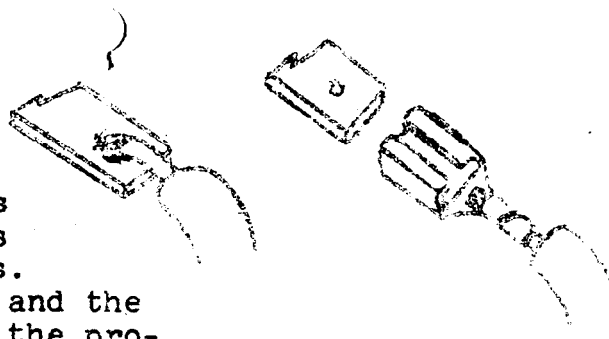
75 lb. embossed kraft paper cut to size may be obtained for the above costs in ordering quantities from 2500 to 4900 sheets. We feel that for this application the embossed paper will protect the lint trap equally as well as the corroflex.

A 20" x 24" kraft paper bag for wrapping the lint trap can be obtained for \$12.50/M. Although this size bag is about twice as large as necessary, there will be additional protection around the lint trap by folding over the bag. This same bag is presently used to wrap the cover for our non-automatic washing machine. The estimated annual material savings using this bag would be \$1131.00.

MATERIALS & PURCHASING DEPT.
 VALUE ANALYSIS UNIT
 February 1952

LTF:DLE:AEM

Methods of Attaching Wires to
Water Switch and Suds Kill Switch



The present method of attaching six wires to these switches is by soldering. It is proposed to use twelve snap-on connectors. Considering the relatively high currents and the lack of severe vibrations, it seems that the proposed snap-on connectors will function properly.

Present Method:

	<u>Adjusted Labor/M</u>	<u>Shop Cost/M</u>
Form end of leaf	\$1.42	\$4.73
Twist ends of wires	1.97	6.58
Solder lead	7.68	25.70
Total: (Not including cost of solder, pots and wire)		<u>\$37.01</u>

Proposed Method:

	<u>Shop Cost/M</u>
Male terminal	\$4.50
Assembly	a 2.00
Female terminal	5.70
Attach	b 4.00
Connect Terminals	c 5.00

Total: (Not including cost of wire) \$21.20

a - estimated cost to insert terminal in switch build-up.
b - estimated cost to attach female terminal to wire.
c - estimated cost to snap female terminal on male terminal.

It is estimated that the suggested method will save \$9486.00 annually. The cost of machine to attach female terminals to wire is \$655.00.

Probably six additional snap-on connectors could take the place of the six knife disconnect terminals. This would mean a further savings of \$4140.00.

Annual cost of six knife disconnects	\$7200.00
Annual cost of three male @4.50/M and three female @5.70/M	\$3060.00

If, however, it would be possible to connect and disconnect the snap-on terminals at the switches for assembly and service, the knife disconnects would not be contributing to the function of this control and could be left out. The annual cost of these knife disconnects (\$7200.00) could then be saved.

Estimated Annual Reduction:

a) Change from soldered connections to snap-on terminals	\$9486.00
b) Substitute snap-on terminals for knife disconnects	<u>\$4140.00</u>
Total	\$13626.00