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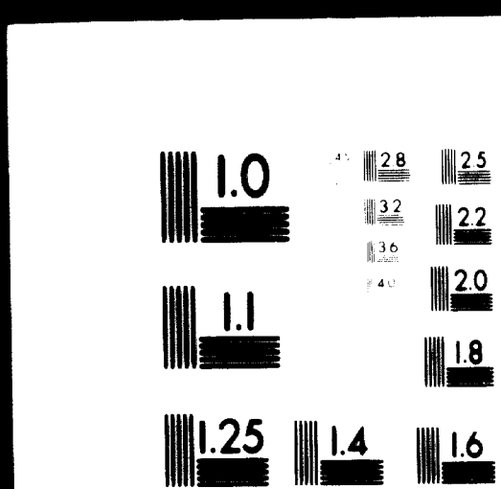

02462

PHILIPPINES.

DRAFT

FINAL REPORT

"THE PROVISION OF SERVICES RELATING TO INDUSTRIAL MANAGEMENT - VALUE ANALYSIS"

Job Description: Phil-101-A-SIS
Contract No. 70/61

By
Pentti Söderlin
H.B. MAYNARD-EUROPE A/S

November 1970

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LIST OF ANNEXES

THE PUROPOSE OF THE REPORT

The subject of the report is to describe:

- the project as stated
- the practical execution
- the recommendations made for future activities

THE PROJECT AS STATED

The purpose of the project was to provide "Expert Advice on Industrial Management - Value Analysis".

Contract No. 70/61, paragraph 1.02, contains the following information:

The Contractor's expert, in consultation with the Philippine's Productivity and Development Center in Manila, shall:

a) Conduct a seminar on value analysis with a major objective of attaining a product service that would provide the highest value and quality commensurate to the specific need and price paid by the consumer or user.

b) Give short-talks to selected groups on value analysis, cost reduction and other related topics.

c) Conduct a consulting service and on-the-spot plant guidance to some selected local enterprises.

THE PRACTICAL EXECUTION

The project can be divided into four stages:

1. Preparatory

After arriving in Manila a month ahead of the expected schedule of the Philippines's Productivity and Development Center (PDC) the first task was to plan the field activities. The schedule is in annex 1. Due to the short notice of expert's arrival four companies were selected for the on-the-spot consulting service from a total number of 44 "Productivity cell" members of the PDC. The practical arrangements to use these companies as pilot plants for promoting interest into Value Analysis was handled by PDC. The list of the companies selected is in annex 2.

2. Management information and short talks on Value Analysis and other cost reduction techniques

The procedure in the selected companies was twofold: First: To inform the management of the Value Analysis concept, their responsibility involvement and expected profits. Further to tell them where it fits in, and to illustrate experience from various fields of business by viewgraphs and slides. Second: To select some pilot project(s) for practical introduction of Value Analysis in the company. The topics for management information are in annex 3. The participants of the Management information are in annexes 4-7. The 3-day program used in these companies is in annex 8.

Separate short talks on Value Analysis were given to a Work Study Seminar, the list of participants is in annex 9 and the topics in annex 10.

In addition Value Analysis was the main topic during visits to:

1. Asian Institute of Management
2. Philippines Council of Management
3. Management Development Institutes Association

3. Consultant service an on-the-spot plant guidance to some selected local enterprises

The on-the-spot plant guidance was given

- to guide the actual project work in the company
- to give guidance to the local PDC consultants in doing V.A. work (see annex 11).
- to gain some savings applying V.A. under consultant advice to specific products, processes, services or problems.

After orientation and management information of Value Analysis the next step was to find some potential objectives for Value Analysis exercise.

From the proposed objectives the following were selected for respective companies as stated in annex 12.

The procedure during the on-the-job training is as follows:

1. Objective Finding
2. Fact Finding
3. Problem Finding
4. Idea Finding
5. Solution Finding
6. Acceptance Finding

During the plant visits, however, it was not always possible, due to the short visiting time, to find the necessary facts where information was not available.

In the various plants the approaches were as described in annexes 13, 14, 15 and 16. As a result from these exercises it was possible to propose to the companies savings worth total P 127,550/annually or $ 20,400/annually.

4. Value Analysis Basic Workshop Seminar

The main purpose of the project was to conduct a seminar on Value Analysis. The fact that Asian Productivity Organization had planned this seminar for November 23 to November 27 caused extra arrangements to inform especially those foreign participants about the advanced schedule. However, it was possible to conduct the seminar on November 11 to November 14 with total 36 participants of which 4 were foreigners. The list of participants is in annex 17.

The purpose of a Basic Workshop Seminar is to:

- Teach the V.A. philosophy and methodology
- Give experience in applying V.A. principals in real projects
- Promote creative thinking
- Create teamwork attitude
- Encourage a new way of thinking

The duration of the seminar was four days and was divided between lectures and practical work. The seminar outline is in annex 18.

For the seminar participants a Value Analysis Seminar Book consisting of 32 pages and a Value Analysis Work Book of 29 pages plus some additional material mainly checklist were handed out as stated in annex 19.

During the seminar the topics were illustrated by case studies both foreign and local (by Mr. Mario Cabanero, who acted as assistant during the seminar). For practical team work the seminar participants were divided into 6 teams and a project for each team had been prepared.

A practical illustration of seminar projects is in annex 20. As a result the teams could propose savings worth total P 77,530 - P 89,290 annually or US$ 12,400 - 14,300 annually if we exclude the project of teams Nos. 5 and 6, which has been realized beforehand and used as a V.A. exercise only.

RECOMMENDATIONS

Considering the short assignment time and experience gained before from similar tasks the following actions are recommended:

1. Provide additional expert advice to follow-up the project started, (1-2 months within 6-8 months). Task: First to visit on-the-spot plants and to ensure the progress and if necessary to promote V.A. activities. Second: To conduct additional V.A. seminar.

2. When starting new Value Analysis programs the following procedure is recommended in installing Value Analysis into the company.

Program phases

1.	Orientation	First visit
2.	Value Analysis Basic Workshop seminar	Second visit
3.	Follow-up and organizing V.A.	Third, fourth and fifth visit

It is advisable to concentrate one company at the time. These visits 2-3 weeks each should be spread over 6-12 months calendar time.

3. If possible arrange similar training projects to other Asian countries as requested by the seminar participants

- Mr. Bahram Sadri
  Head of Industrial Engineering Department
  Industrial Management Institute
  437, Takhte Jamshid Ave, Iran
  and
- Mr. Lam Koon-Wai
  Management/Technology Trainer
  Hongkong Productivity Center
  Gloucester Building, Hongkong
  and
- Mr. Bok Hynn Yoon
  Managing Director
  Korea Productivity Center, 10, 2-Ka, Pildong, Seoul, Korea

SUMMARY

The primary task to:

- Conduct a seminar on Value Analysis
- Give short talks on Value Analysis
- Conduct a consulting service and on-the-spot plant guidance

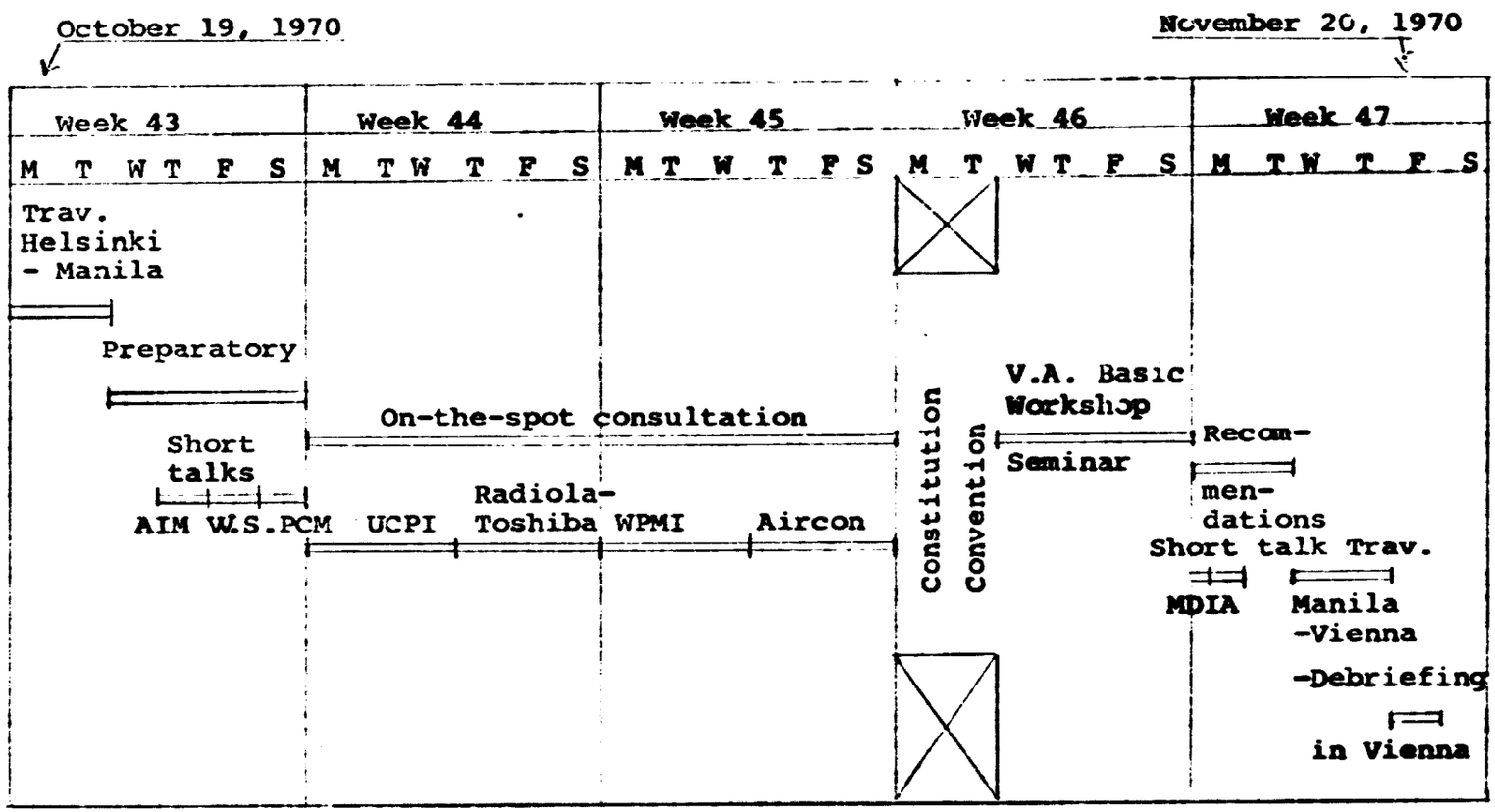
has been completed.

The field activities have resulted in some companies in saving proposals worth total US$ 32,800 - 34,700 and due to the seminar and short-talks further interest in Value Analysis has been promoted. Further during the assignment some local counterparts from various organizations have received training during plant visits thus ensuring multiply effect from the expert's visit.

Considering the fact that labour costs in developing countries are generally very low the major cost factor in industry being material and overhead cost, the local counterparts and the managements of the visited companies were convinced about the new approach of Value Analysis which enables to attack the total product cost thus benefitting them best.

Annex 1.

TIME SCHEDULE



SELECTED COMPANIES FOR THE CONSULTANT SERVICE AND ON-THE-SPOT PLANT GUIDANCE

1. Union Carbide, Battery Plant, Mandalyong, Rizal

   Turnover P 100 mill
   Personnel 600
   Products: Dry-sell batteries:
   D-size
   C-size
   AA-size
   Total capacity 500.000 batteries/day
   Plant area 10 ha
   Established 1955

2. Radiola-Toshiba, Philippines Inc., Mandalyong, Rizal

   Turnover P 11,8 mill
   Personnel 709
   Products: Transistor radios, Radio-Phono Combinations
   T.T. Receivers
   Electrical parts and components
   Established 1961, joint venture with Toshiba 1968

3. World Wide Paper Mills

   Personnel 142
   Turnover P 7,2 mill
   Products: Boxboard standards caliber Nos:
   15, 16, 18, 20, 22, 24, 26, 28, 30, 32
   Plant area 3 ha
   Established 1954

4. Aircon Inc.

   Personnel 400
   Turnover P 37 mill
   Products: Aircond. TV-sets radiosets
   Plant area 20 ha
   Established 1963

MANAGEMENT INFORMATION TOPICS

1. Introduction: VA/VE What it is?
   - An organized study
   - A team effort of all departments
   - A dynamic program
   - A planned discipline
   - A realistic method for increasing profits
2. Why Value Analysis work?
3. Total value engineering effectiveness
   - influence on other factors than cost reduction
   - improvement factors
   - factors leading to changes
4. Relating Value Analysis on other IE techniques
5. Expected results from V.A. activities
6. The right way to initiate V.A.
   - organize effort
   - get management backing
   - select V.A. coordinators
   - set up schedules
   - develop systems and procedures
   - rank projects
   - verify the value improvement
7. Discussion
   V.A. and our company

MANAGEMENT INFORMATION UCPI

Name	Position
1. Dario A. Sena	Head, Quality Assurance Dept.
2. Rogelio Q. Lim	Applications Engineer
3. Edgard O. Cabigting	Industrial Engineer (trainee)
4. D.B. Jacob, Jr.	Management Information & Systems Service
5. Romeo D. Tupas	Project Engineer
6. R.J. Alonso	Special Operations
7. L.B. Fajardo	Plant Manager
8. M.J. Dinglasan, Jr.	Assistant Plant Manager
9. E.L. Santos	Head, Production Dept.
10. E.T. Jimenez	Process Control Engineer
11. R.C. Claridad	Senior, Methods Engineer
12. R.P. Acosta	Junior Methods Engineer
13. A.R. Hugo	Head Maintenance Dept.
14. J.D. Regala	Actng Plant Mgr
15. J.M. Jimenez	Corporate Quality Assurance Engineer

Annex 5.

RADIOLA-TOSHIBA PHILIPPINES, INC.
19 Katarungan Street
Mandaluyong, Rizal

MANAGEMENT INFO

NAME	POSITION
MR. ANGEL SANZ	PRESIDENT
MR. DAISUKE MATSUGAKI	EXECUTIVE VICE-PRESIDENT
MR. BALDOVINO LAGBAO	CHIEF ACCOUNTANT
MR. VENANCIO T. PINEDA	VICE-PRESIDENT, SYSTEMS
PERFECTO DEL MONTE	SALES MANAGER
MR. GONZALO P. MA. BENGZON	MARKETING MANAGER
MR. FRANCISCO MOLINA	PRODUCT ENGINEERING DEPT
MR. EMILIO C. EMBRADURA	PRODUCTION MANAGER
MR. LEO R. VICENCIO	MANDALUYONG WOODCRAFT, INC./RADIOLA

MANAGEMENT INFORMATION

WORLD-WIDE PAPER MILLS INC., BALER PLANT

NAME	POSITION
Leonardo B. de Ocampo	General Manager
Vicente Besin Jr.	Plant Manager
Honorio Poblador III	Ass. Gen. Mgr
Ruperto F. Magbuo	Asst to the G.M. LCI
Menardo T. Concio	Asst Gen. Mgr LCI
Percival R. Santiago	Q.C. & Plant Service Mgr
Roberto G. Viado	Controller

MANAGEMENT INFORMATION

AIRCON INC.

Name	Position
Edvardo R. VACA	Exec. Vice President
German B. Mangalindan	Production Mgr
Angelito L. Cazenas	Electronics Mgr
Mario T. Espirito	Chief Accountant
Jaime M. Leslie	Assist. Electronics Mgr
Rodolfo Alonso Jr.	Service Manager
Rodolfo Raymundo	Packaging Systems Manager

THREE-DAY PROGRAM FOR ON-THE-SPOT CONSULTATION

I Day - Orientation
- Management Information for Top Management

II Day - Objective Finding for on-the-job Training
- Selection of Project
- On-the-job Training

III Day - On-the-job Training

THE PRODUCTIVITY AND DEVELOPMENT CENTER

[illegible] ON [illegible] STUDY
October 19 to November 13, 1970

LIST OF PARTICIPANTS

1. [illegible], [illegible] A.
   [illegible] Estimator
   [illegible], Inc.

2. [illegible], [illegible] J.
   [illegible] Project Engineer
   National Investment and Develop-
   ment Corporation (NIDC)

3. [illegible], [illegible] T.
   Analyst
   [illegible] Aguinaldo Corporation

4. [illegible], [illegible]
   Analyst
   [illegible] Aguinaldo Corporation

5. [illegible], [illegible] J.
   Research [illegible] Chemist
   [illegible] Textile Mills, Inc.

6. [illegible], ([illegible]) JULIET
   Junior Project Engineer
   Scott Paper Mills, Inc.

7. CASTRO, [illegible] D.
   Cabinet Engineer
   [illegible] Appliance Co., Inc.

8. [illegible], [illegible] C.
   Supervisor
   Republic Glass Corporation

9. DIAZ, [illegible] P.
   Systems Analyst
   Manila Electric Company

10. [illegible], [illegible] S. JR.
    [illegible] Area [illegible] Systems
    [illegible] Division
    [illegible] Aguinaldo Corporation

11. [illegible]
    [illegible]

12. [illegible], [illegible]
    Industrial [illegible]
    Manufacturing [illegible]
    [illegible], Radiowealth, [illegible]

13. [illegible], [illegible].
    Industrial Engineer
    Republic Glass Corporation

14. LORA, GIL C.
    Mill [illegible]
    Consolidated Mills, Inc.

15. LOMAS, [illegible] G.
    Overseer [illegible]
    [illegible] Textile Mills, [illegible]

16. SANCHEZ, [illegible] A.
    Research [illegible]
    National [illegible] Develop-
    ment Corporation ([illegible])

17. [illegible], [illegible] L.
    Superintendent
    Consolidated Mills, Inc.

18. SANTOS, [illegible]
    Technical Assistant
    Productivity and Development
    Center

19. SARMIENTO, [illegible] C.
    Maintenance Engineer
    Worldwide Paper Mills, Inc.

20. SALVA, [illegible] G. JR.
    Plant Superintendent
    Eastern Manufacturing Corp.

21. [illegible], [illegible] A.
    Technical [illegible]
    Productivity and Develop-
    Center

A SHORT TALK TO THE WORK STUDY

SEMINAR ON VALUE ANALYSIS

1. What is value analysis?
2. History and development
3. Factors leading to changes
4. Relating V.A. to work study
5. Illustrating V.A. changes through slides of implemented projects
6. Discussion

PHILIPPINO COUNTERPARTS DURING EXPERT'S VISITS TO SOME LOCAL COMPANIES

Antonio M. Sison)	
Cris Santos)	Productivity and Development Center
Ady Santos)	
Rudolfo O Sumicad)	University of Philippines, Institute
Wilfredo Santiano)	of Small Scale Industry
Buddy Ungson	Economic Development Foundation

On-the-spot plant guidance projects

1. UCPI

   Proposed projects:

   1. Punch tooling
   2. Packaging line
   3. Battery covers
   4. Automatic traying device
   5. Paper slitting
   6. Reduction of scrap of electrodes

   No. 1 Punch Tooling and No. 6 Reduction of scrap of electrodes were selected

2. RADIOLA-TOSHIBA, Philippines, Inc.

   Proposed projects

   1. Columbia 1035 (Radio)
   2. " 1015 "
   3. " 1050 "
   4. Lancer "
   5. Charger "
   6. Islanger "
   7. Citation "
   8. Sound mate (Radio-Phono)
   9. 20 TV GDR (TV)
   10. 20 TV GF "
   11. Play mate (Radio-Phono)
   12. SS-410 "
   13. Stereopak (Radio-Phono)
   14. 20 TV SGD (TV)
   15. 20 EC-T "
   16. 20 EC-1 "
   17. FM Stereo (Radio-Phono)

   No. 12 SS-410 Radio-Phono was selected

3. WORLD-WIDE PAPER MILLS INC.

Proposed projects:

1. Maintenance shutdown
2. Product policy
3. Scrap preventation
4. Boxboard furnace
5. Fibre losses

No. 1 Maintenance shutdown was selected

4. AIRCON INC.

Proposed projects:

1. Fedders (Airconditioner)
2. Norge "
3. Airmaster "
4. Astran (Refrigir.)

No. 3 Airmaster airconditioner was selected

UCPI: On-the-job training

Team: Cruz, Roberto
Jose, JS
Cabicting, E.P.
Claridad, R.C.
Sison, E.N.
Sumicad) ISSI
Santiano)
Santos, Ady PDS

Project: No. 7 Reduction of scrap of electrodes

Description: In the manufacturing process of batteries a fairly large number electrodes are currently scrapped due to various reasons. The vaste represents worth P 360.000 annually.

Function analysis (what happens during the process)

1. Remove electrode (from crate-tray)
2. Transport tray
3. Feed stamper
4. Dispense electrode
5. Push electrode (into bobbin)
6. Transport bobbin
7. Tray bobbin
8. Transport bobbin
9. Cook bobbin etc.

The vaste occures during functions 1.-7.

Information

For further study the various types of scrap have to be studied. For that purpose the following statistics are needed:

Scrap of electrodes due to

1. Titled electrode
2. Off-centered electrode
3. Slanted bottom
4. Cracked bobbin
5. Chipped top/bottom (bobbin)
6. Pulled top (bobbin)
7. Chipped electrode
8. Broken electrode
9. Finned top/bottom (bobbin)
10. Short/tall bobbin

Because this information was not available, the further study of this project was delated.

Project No. 1 Punch Tooling

Description: As a result from increasing the capacity of extruding of cans 20%, the tool life has decreased from 200.000 cans to 70.000-100.000 cans. Saving potential if tool life can be increased to 150.000 cans P 40.000-50.000 annually.

Problem finding

The following might be reasons for short tool life:

- overheating due to increased speed
- misalignment
- callop misfeeding
- offsize collar
- inproper lubrication

The team decided after careful consideration that the main reason is overheating.

Idea finding

How to avoid overheating?

1. Use air cooling
2. Use water cooling
3. Ventilation of area
4. Use downtime for cooling
5. Change tool material
6. Change tool lubricant
7. Replace the tool tip
8. Slow down
9. Use sleeve around male
10. Use cooling tube
11. Stop preheating of callop
12. Replace male for rest
13. Cool the body of machine
14. Apply wax more often
15. Overheat the callop

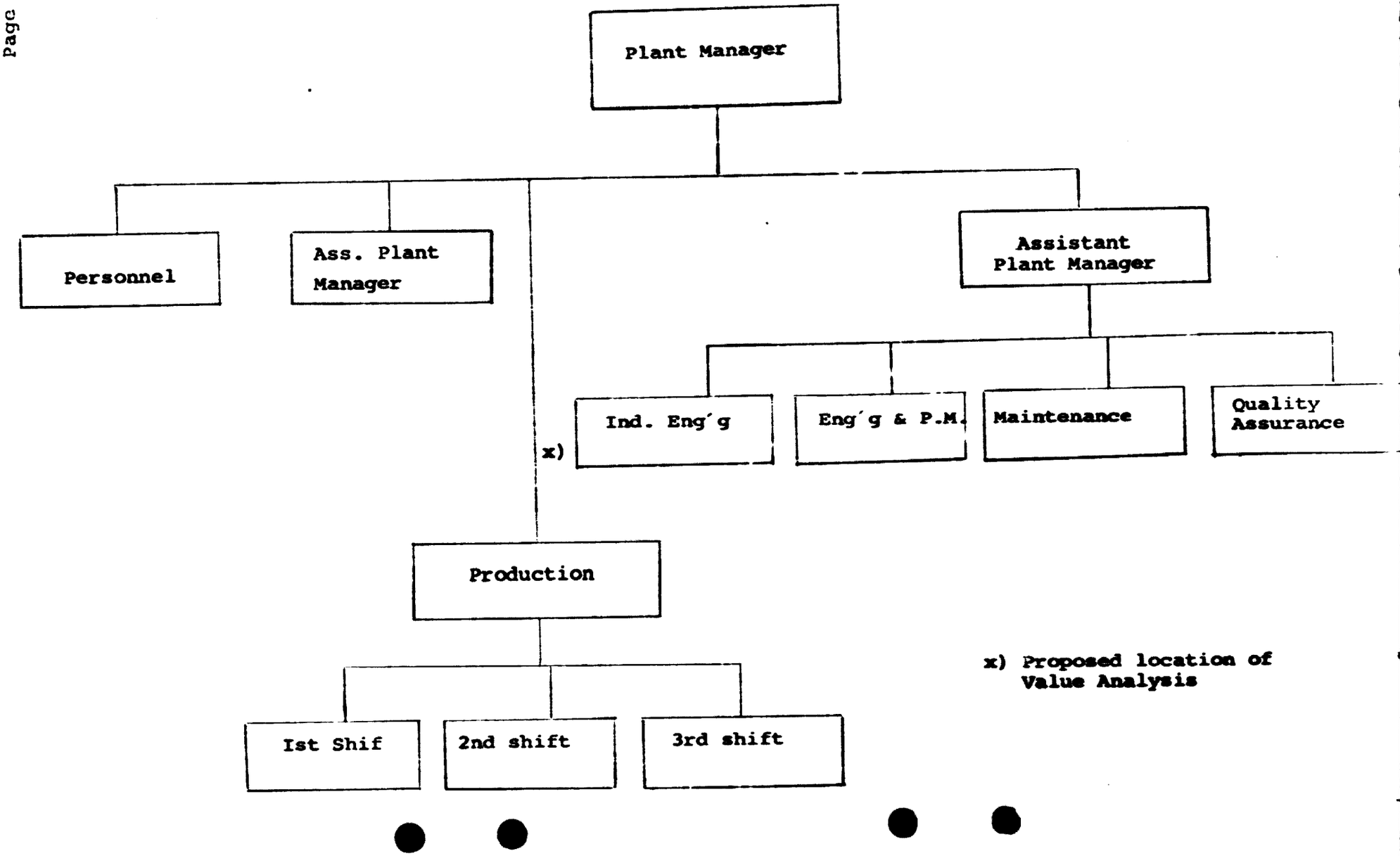
Solution finding

The following suggestions were forwarded for acceptance:

- Get aircooling device to test if pressure air cooling prolongs tool life
- Insulate preheating device to avoid excessive heat
- Chrom plating for punch male

Savings: No verified savings can be recorded before tests have been made.

Union Carbide
Battery Plant



x) Proposed location of Value Analysis

PAGE 14.

VALUE ANALYSIS
CONDUCTED BY MR. [illegible] SODERLIN
AT
RADIOLA-TOSHIBA PHILIPPINES, INC.-OCT. 29 - 31, 1970

Team:

1. EMILIO EMBRADURA - Production Manager
2. FRANCISCO MOLINA - Chief, Production Engineering Dept.
3. BALDOVINO LAGBAO - Chief Accountant
4. ELPIDIO HIDALGO - Chief, Fabrication Section
5. CESAR MANALASTAS - Chief Mechanical Designer, PR&D
6. HERMES JARDIN - Chief, Local Procurement
7. ADY SANTOS - PDC
8. BUDDY UNGSON - EDF

PRODUCT - SS-410

What is it?

A portable radio-stereo phonograph

Power Output?

1.5 watts per channel

Cost Breakdown

Electrical Parts	-	47%	
Record Player	-	23%	
Mechanical Parts	-	13%	
Cabinet Assy.	-	11%	(Cabinet cost - ₱29.50)
Assy. Cost	-	6%	
		100%	

Mechanical Parts

Control Panel Assy.	- ₱3.00	-	locally fabricated
Chassis	- ₱2.66	-	" "
Cabinet Side Trim	- ₱2.77	-	" "
Volume Knob Assy. (6 pcs.)	- ₱1.52	-	locally purchased
SMK Socket (power input)	- ₱1.50	-	imported
Grille Cloth (₱18/yard)	- ₱3.75	-	locally purchased
Carton Box	- ₱6.90	-	" "
*Handle	- ₱0.84		
*Handle Arm Retainer Plate	- ₱1.99		
	₱34.43		
Handle Assy.	- 11.83		

Functions:

1) Provides Grip - Basic
2) Saves Space - Secondary
3) Supports Cabinet - "
4) Links Cabinet - "
5) Provides Esteem - "
6) Suits Hand - "

Basic Function:

Provides carrying device

A 1) Hole in cabinet
A 2) Use soundmate handle
A 3) Rope
A 4) Short strap
A 5) Collapsible plastic handle
B 6) Flat handle and fasteners
B 7) Flat handle and retainer assy.
B 8) Metal handle
A 9) Knobs
A 10) Wooden handle
A 11) Eye bolt
A 12) Plastic ear
A 13) Long leather strap
A 14) Semicircular grip
A 15) Use playmate handle
A 16) Non-collapsible plastic handle
A 17) Camera type strap
A 18) Collapsible metal handle
A 19) Rubber handle
A 20) Chain
B 21) Simplify design
A 22) Porfolio handle
A 23) Recession in cabinet
B 24) Simple bolt and nut
B 25) Keep old cover and use No. 24 + steel wire
A 26) T-type handle
B 27) Plastic grip with steel backing
A 28) L-type handle
A 29) Use top cover
A 30) Basket strap
A 31) Give cushion
A 32) Provide plastic bag
B 33) Plastic retainer + plastic grip

IDEA No. 6 - ₱6.10

Good features	Bad features	How to overcome
• Cheaper • Local • Easier to mount • Fewer parts • No countersink in cabinet	less attractive Needs Singer approval Poor grip Poor quality	Save only ₱4.00

IDEA No. 27 - ₱4

Good features	Bad features	How to overcome
• Cheaper • Local • Easier to mount • Fewer parts • No countersinking • Less bargaining • Equal to previous in appearance	• Less durable • Grip slippery when wet	• Shape washer

Expected savings

Cost of original handle assy. - ₱11.83
Cost of recommended type - 6.10

Difference - ₱ 5.73

Estimated volume per year - 4800 units

₱5.73 x 4800 = ₱27,504.00

STEPS FOR IMPLEMENTATION

1) Prepare sample
2) Get Singer approval
3) Check inventory
4) Check outstanding orders
5) Prepare cabinet modification drawings
6) Conduct tests
7) Set-up quality control standards

BATTERY COMPARTMENT

Cost Breakdown

1) Battery net covers	- 2 pcs.	- Imported	-	₱4.82
2) Battery tubes	- 4 pcs.	- Locally purchased		.54
3) Battery markers	- 2 pcs.	- Local Fab.	-	.04
4) 3ø x 6 screws	- 8 pcs.	- Imported	-	.16
5) 3ø Nuts	- 8 pcs.	- "	-	.15
6) Terminal lugs	- 4 pcs.	- Local Fab.	-	.13
7) Flatwashers	- 5 pcs.	- Locally purchased		.07
8) 2.7 x 13 Cross-recessed screws	4 pcs.	- Imp.	-	.14
				₱9.51

Functions:

A 1) Gives esteem
A 2) Provides access
B 3) Holds batteries
A 4) Aligns batteries
A 5) Connects batteries
A 6) Anchors cabinet
A 7) Gives information
A 8) Gives weight
A 9) Resists corrosion
A 10) Takes space
A 11) Balances weight
A 12) Easy removal

SEAT COVER ASSY.

A 1) Provides connection
B 2) Provides access
A 3) Gives esteem
A 4) Locks batteries
A 5) Requires alignment wood
A 6) Anchors cabinet
A 7) Provides insulation
A 8) Provides individual access
A 9) Extends space
A 10) Increases servicing

Basic Function: Provides Access

1) Swinging door	- ₱1.45
2) Screw caps	
3) Window type (sliding)	- ₱1.50
4) Wood cover with screws	- ₱0.40 or ₱0.50
5) Drawer type	
6) Change access	- ₱0.70
7) Zipper type	- ₱1.20
8) Sliding door	- ₱1.45
9) Curtain type	- ₱1.00
10) Push type	

Basic Function: Provides Access (cont'd)

11) Lock type door
12) String type
13) Hooks
14) Automatic lock
15) Button type
16) Snap-On type
17) Adhesive type
18) Use adhesive tape
19) Suction type
20) Flip cover plus tape
21) Use glue with cover - ₱0.25
22) Strap
23) Pressure type - metal
24) Pressure type - plastic cap
25) Rubber type
26) Pin Ball machine type
27) Individual circular swinger
28) Pivot clamp
29) Magnetic type
30) Lazy tong hinge type
31) Baffle bag type - ₱0.15

BAFFLE BAG

Good features	Bad features	How to overcome
• Cheap • Easy to manufacture • Easy to secure • Less parts	• Difficult to replace • Not attractive • Needs approval of client • Reduces sales value • Requires extra electrical connections • Hard to use • Not durable	Make it colorful Reduce sales value

WOODEN COVER WITH DIFFERENT FASTENING METALS - ₱0.50

Good features	Bad features	How to overcome
• Cheap • Durable • Easier servicing • Secure • Local • Saves space	• Requires approval • Less attractive • Needs cabinet redesign • Looks cheap • Requires tool	• Negotiations • Put deco plate • Not frequent anyway

EXPECTED SAVINGS

Cost of original type	-	P9.51
Cost of proposed type	-	P0.50
Difference	-	P9.01

P9.01 x 4800 = P43,248.00

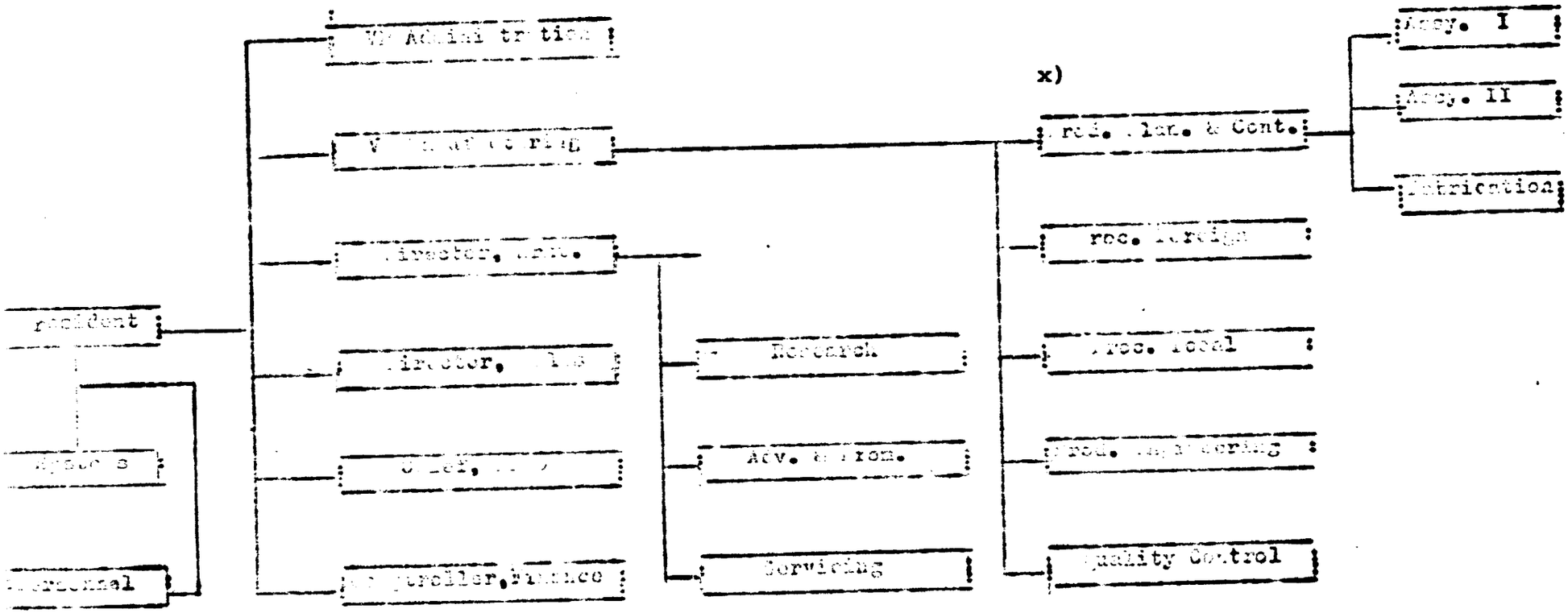
TOTAL SAVINGS FOR THE SS-410 MODEL - P27,504 + P43,248 = P70,752

EMILIO C. EMBRADURA
Team Captain

EE:fgm

11/11/70

ORGANIZATION SCHEME OF RADIOLA-TOSHIBA PHILIPPINES INC.



x) Value Analyst

ANNEX K

WPMI - BALER

PROBLEM: How to shorten shutdown time.

IDEAS (Speculative)	SAVINGS
1. Do cleaning in place.	7 x 15 minutes.
2. Replace with 4 spares.	3 x 15 minutes.
3. Use additional men to install long felt.	30 minutes.
4. Use pattern or guide to remove and install.	?
5. Use special felts to reduce frequency of shutdown as a result of less dogging.	?
6. Use two cranes.	30 minutes.
7. Use 4 cleaning tanks and add boom type crane.	90 minutes.

EVALUATION OF POSSIBLE SAVINGS

IDEA #1

Time Saved = 7 x 15 = 105 minutes
Savings = 1.75 x 48 times x ₱500.00 = ₱42,000.00/year
Method:

a) Use high pressure water for box.
b) Introduce acid solution in the box.
c) Introduce steam.
d) Clean, the usual manner manually.
e) Drain and flush.

IDEA #2

Time Saved = 3 x 15 = 45 minutes
Savings = 0.75 x 48 x ₱500.00 = ₱18,000.00/year
Cost of 4 Cylinders = ₱88,000.00
Expected Life = 5 years
Amortization = ₱17,600.00/year

VFB/*cdm

Idea #3

Savings = P12,000/year - (gross)

Cost of add'l. labor (for shutdown only) = P600/year/man

Net Savings = P10,200.00

Idea #4

Requires study to design facility.
Long term project.

Idea #5

Requires consultation with vendor.
Long term project.

Projected Savings = 1/3 of shutdown frequency = P40,000 potential savings.

Idea #6

Gross Savings = P12,000/year

Cost of equipment = P2,000 (rough estimate).
Net Savings = P10,000/year (on the first year).

Idea #7

Gross Savings = P36,000/year.

Additional Costs:

a)	Boom type crane (estimate) =	P4,000.00
b)	Additional cleaning boxes(2)	1,000.00
c)	Additional labor (6 persons)	3,600.000
		P8,600.00

First Year Savings = P27,400.00

SUMMARY OF SAVINGS:

The following ideas are feasible:

SHORT TERM

(1)	Idea #3	-	P10,200.00
(2)	Idea #6	-	10,000.00
(3)	Idea #7	-	27,400.00

Combination of #1 and #3 = P37,600.00
Required Investment = P 5,000.00

LONG TERM

(1)	Idea #4	-	?
(2)	Idea #5	-	P40,000.00 (potential)

Assumptions: a) 30% longer life (strength)
b) 50% higher cost
Present felt costs = P72,000/year

Projected cost of improved felts = $72{,}000 \left(\frac{1.5}{1.3}\right) = P84{,}000$

Required addtl. investment = P12,000/year

Potential net savings = P28,000/year

Conclusion:
Consult vendor as soon as possible for revision of felt design to meet assumptions.

SUMMARY

1. Prepare plans to implement short term projects
savings - P37,600.00.

2. If nylon felts can be designed, make trial run.
Potential - P28,000.00.

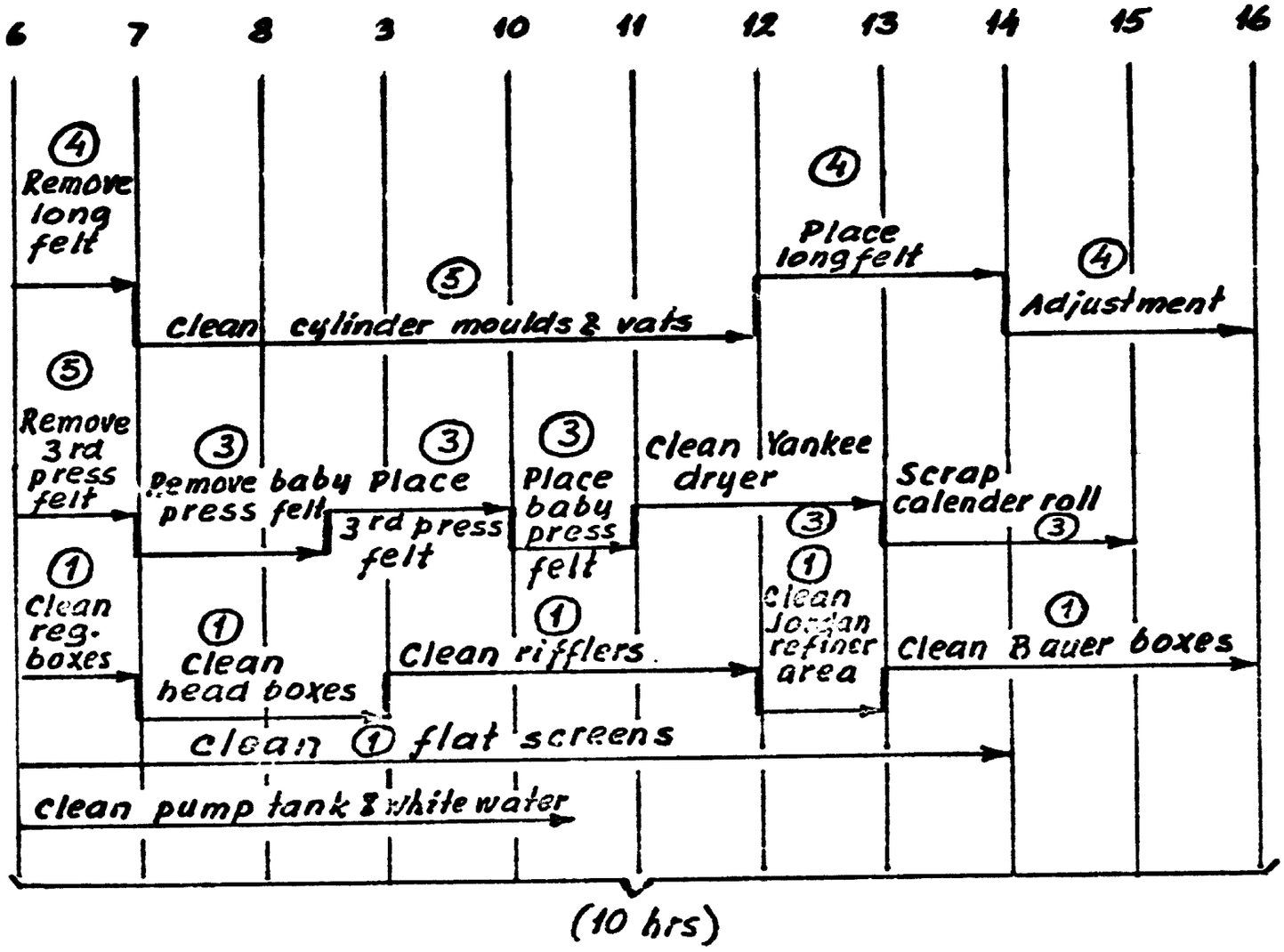
PROJECTED TOTAL SAVINGS OF COMBINATION = P65,600.00.

CODE NUMBER	DESCRIPTION OF ACTIVITIES	MANPOWER	TIME	REMARK
A	Install long felt	8 men	1 hr - 45 min	
B-1	Dismantle long felt	6 men	45 min	
B-2	Pull out cyl. mould #3	3 men	15 min	
B-3	Clean cyl. mould #3	3 men	45 min	
B-4	Install cyl. mould #3	3 men	15 min	
B-5	Finished cyl. mould #3 at vat	2 men	15 min	
C-1	Clean vat box #1	2 men	30 min	
C-2	Clean vat box #3	2 men	30 min	
D-1	Loosen bearing bolt	2 men	35 min	
D-2	Pull out cyl. mould #1	3 men	15 min	
D-3	Clean cyl. mould #1	3 men	45 min	
D-4	Install cyl. mould #1	3 men	15 min	
D-5	Finished cyl. mould #1 at vat	2 men	15 min	
E-1	Pull out cyl. mould #2	3 men	15 min	
E-2	Clean cyl. mould #2	3 men	45 min	
E-3	Install cyl. mould #2	3 men	15 min	
E-4	Finished cyl. mould #2 at vat	2 men	15 min	
F-1	Clean vat box #2	2 men	30 min	
F-2	Pull out cyl. mould #4	3 men	15 min	
F-3	Clean cyl. mould #4	3 men	45 min	
F-4	Install cyl. mould #3	3 men	15 min	
F-5	Finished cyl. mould #4 at vat	2 men	15 min	
G	Clean vat box #4	2 men	30 min	

/lmp
11/12/70

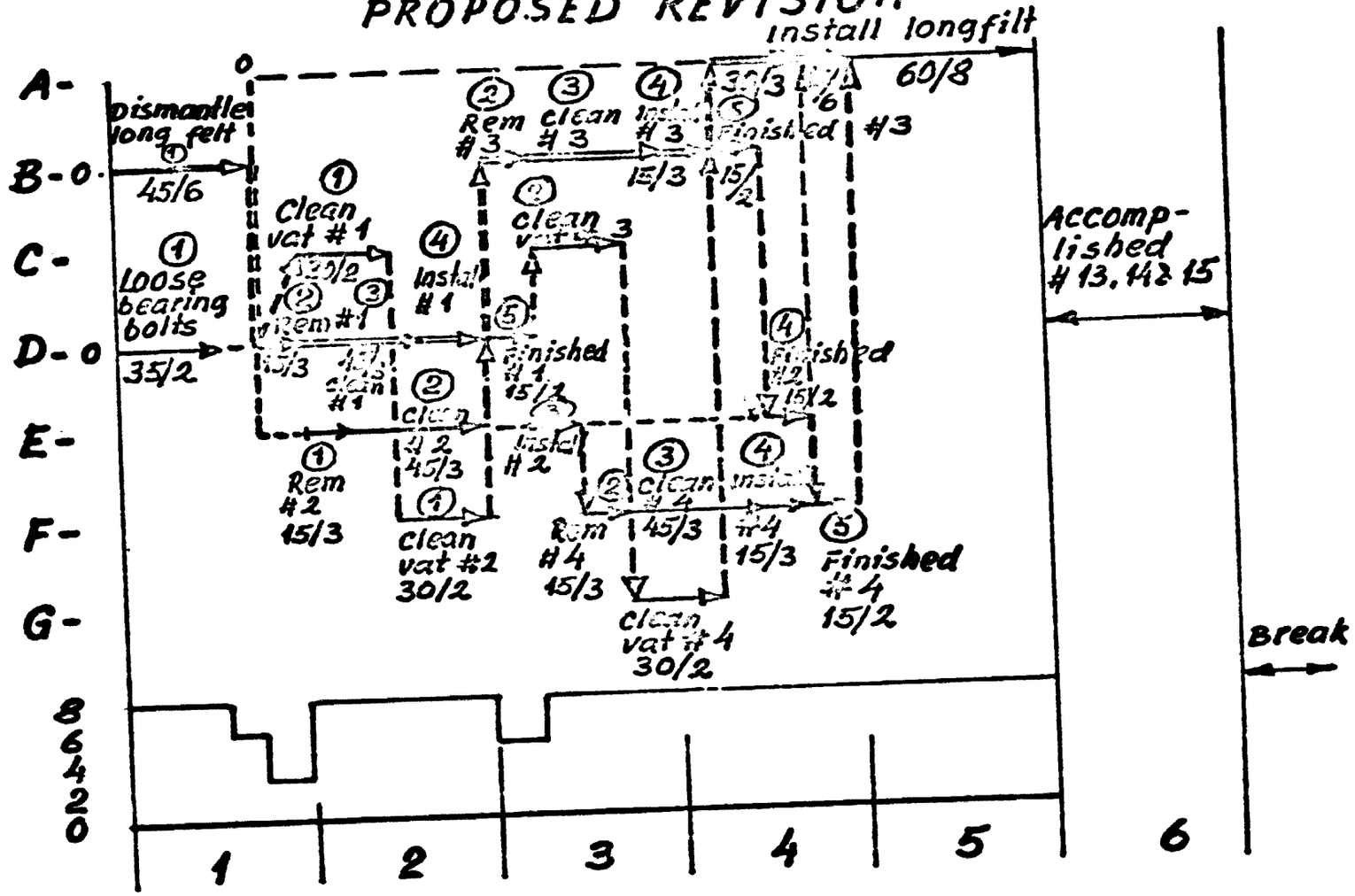
SHUTDOWN SCHEDULE

OLD PROCEDURE



SHUTDOWN SCHEDULE

PROPOSED REVISION



AIRCON INCORPORATED

On-the-job training

Team:	Romulo Ison	Technical ass.
	Romulo T. Garcia	QC supervisor
	German B. Mangalindan	Prod. Manager
	Alfredo C. Severino	Prod.Dev.
	Silvestre David	Assistant Prod.Mgr
	Leoncid Punzalan	Supervisor
	Narciso Menodza	-"-
	Ady Santos	PDC
	Antonio M. Sison	"

Information

Airmaster ACH-10-E5/Fedder ACB-12

	Airmaster Cost P	Fedder Cost P
Motor with fans	112,50	113,00
Compressor	480,-	480,-
Condensor	77,-	67,-
Evaporator	55,-	55,33
Condensor shroud	7,-	3,50
Evaporator cover	4,-	6,-
Bottom pan	16,50	15,-
Volute Assy	5,-	5,-
Cabinet Assy	27,50	25,-
Decorative front	60,-	61,-

Project: Condensor ring
P 1,36/each
10 000 pcs/ann.
P 13 600/ann.

Material 1.29
Labour +
OH 0,07
1.36

Function:

S Protects motor
B Guides Airflow
S Fastens to shroud
S Resists corrosion
(S Gives strength)
S Resists heat

Speculation: Guides Airflow

0.85	1	Use steel + paint
-	2	Use plastic
-	3	Use glass
-	4	Use wood
-	5	Use asbestos
-	6	Use molded fibre glass
+	7	Draw one piece
-	8	Increase depth of shroud
1,00	9	Use thinner gage al
?	10	Use tin plate
+	11	Fasten with screws
+	12	Draw deeper less al
+	13	Spotweld steel ring
-	14	Use boxboard ring
-	15	Use gun metal
-	16	Use zinc
1,23	17	Use GI (galvanized iron)

EVALUATION

1. Steel ring, spot welded + painted
   in flat position
   - painted round

PLANNING

Idea: Steel ring, 3 grooves, thinner gage (30), same fastening, painted

Savings P 5500/annually

Steps to implement:

- Test grooving
- Get approval of mngt
- Sequence of operation
- Put Alfredo Severino to the job
- Precise saving calculations

Project: Condensor

Idea: Use same condensor in airmaster as in fedders

Total saving P 30 000/annually

Steps to implement:

- Test condensor
- Get approval

Project: Compressor Suction Line Tube

Idea: Use same coil as in fedders

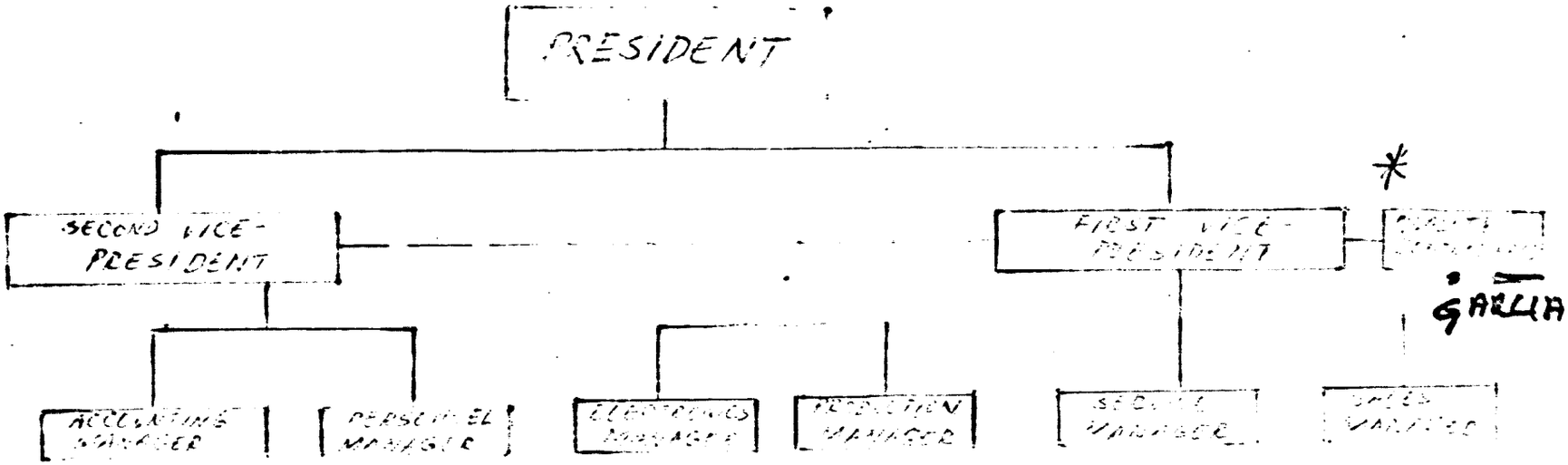
Total saving P 5700/ann.

Steps to implement:

- Test tube
- Get approval
- Release change notice

Total all change proposals:

P 41,200/annually



AIRCON INC. ORGANIZATIONAL CHART

* PRESIDENTIAL ASSISTANT

ANNEX 17

DE LA SALLE GRADUATE SCHOOL
PRODUCTIVITY & DEVELOPMENT CENTER
****

SEMINAR ON
VALUE ANALYSIS
November 11 to 14, 1970

LIST OF PARTICIPANTS

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Corporation.
Vitarich, Marilao, Bulacan

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Radiola - Toshiba, Phil. Inc.
Mandaluyong, Rizal

Lam Koon-Wai
Management/Technology Trainer
Hongkong Productivity Center
Gloucester Building , Hongkong

Bok Hyun Yoon
Managing Director
Korea Productivity Center
#10, 2-Ka, Pildong, Seoul, Korea
Tel. No. 26-07-95

SEMINAR OUTLINE

I. INTRODUCTION TO VALUE ANALYSIS

- A. Definition of Value Analysis
- B. History and Development of Value Analysis
- C. Reasons for Unnecessary Cost
- D. The Meaning of "Value"

II. TECHNIQUES OF VALUE ANALYSIS

- A. Problem Solving Techniques
- B. The V.A. Method or Job Plan
- C. The Functional Approach
- D. Team Project Work Formulation

III. EVALUATION OF FUNCTION, COST AND WORTH

- A. Cost Analysis
- B. Function/Cost Analysis Techniques
- C. Creative Ability
- D. The Part Approach
- E. Using the Right Costs
- F. Project Work

IV. MEASURING THE EFFECTIVENESS OF THE VALUE ANALYSIS PROGRAM

- A. Organizing & Controlling V.A.
- B. Selecting Projects
- C. Completion of Projects
- D. Presentation of Conclusions
- E. Review of V.A. Proposals and the Formulation of Alternative Proposals

V.A. SEMINAR MATERIAL

1.	Value Analysis Seminar Book	
2.	Value Analysis Work Book	
3.	VE Checklist	VE. Dec. 1969
4.	New Product Dev.	VE. Feb. 1970
5.	Ergonomics Checklist	VE Sept. 1968
6.	Checklist for the better use of labour in the firm	VE July 1968
7.	Negotiation checklist	VE June 1969
8.	Value Assurance Checklist for Product Design	VE April 1968
9.	Checklist for use in a V.E. Project	VE March 1969

ANNEX 20

	Project No. 1

Name of Project: FRONT CABINET ASSEMBLY OF ROOM AIR CONDITIONER.

AIR-CON	₱46.70	4,000 PCS.	₱186,800

Description of Project:

CONTROLS AIR CIRCULATION, POWERS AND DECORATES THE FRONT OF THE ROOM AIR CONDITIONER.

Attachments:

1. Cost Data
2. Tracing
3. List of Sub-Assemblies
4. Functions of Decorative Return Assembly

TEAM I

BABILONIA, GIL

CLARIDAD, RAMON (CCP) *

GARCIA, ROMULO AIRCON †

ISON, ROMULO AIRCON †

PE. BENITO, NESTOR

ROSARIO, VENANCIO

Investigated by: _____ Date: Nov. 13 1970

Front Cabinet Assembly of Room Air-Conditioner

Covers air conditioning cores and decorates the front of the room air-conditioner.

Present: The decorative front cover is made of vinyl film overlaid on aluminum plate. "Airmaster" sign made of Ni. Plated bronze.

Proposal (a): Decorative front cover made of plastic with embossed "Airmaster" sign

Proposal (b): Decorative front cover made of plywood with "Airmaster" sign made of plastic

		(a)	(b)
₱31.70		₱26.28	23.34
₱15.00		15	15
₱46.70		41.28	38.34
		5.42	8.36
		4000	4000
		₱21,680	33,470

Team 1

Nov. 13, 1970

2

Radiola Toshiba "Playmates" Portable Radio Phone

	Price		Sales
Radiola-Toshiba	₱150.00	6000/year	₱900,000/yr.

Portable Transistorized Radio – Phonograph Equipment

Prototype Set Cost Data

Team # 2 Members

1. Alfredo Paule - Meralco ——— Gp. Chairman
2. Leo R. Vicencio - Radiola Toshiba — member
3. Eliseo Bacdod - Mabuhay Vinyl Co — "
4. Arnulo Santos - Productivity & Development Center — "
5. Sulpicio Quilatan Jr. - Sarmiento Ent., Inc. — "
6. Jaime Ereñita - Litton Mills — "

Investigated by: Team # 2 Date: Nov. 1970

Radio "Playmate" Radio-Phonograph Set

To provide entertainment & information

To change Imported Plastic Turntable Base to Locally Injected Plastic Turntable Base.

PRESENT BASE		PROPOSED BASE
	Materials	$ 1.50
	Labor	1.00
	Overhead	1.50
$ 15.00/ea (Imported)	Total	$ 10.00/ea (Locally injected)
	Unit Savings	$ 5.00
	* Incidental Saving	.66
	Quantity per year	6,000 sets

* In using a Local's Injected Base, it was found that it is possible to eliminate some mtg. brackets, washers, & screws thus increasing the unit saving from $5.00 to $5.66.

ANNUAL SAVING $ 33,900.00

Cost of change No change in design

Savings in First year No change in design

Presented by Team # 2 Date Nov 13 1970

3

1 cu ft Refrigerator Evaporator to Reynolds Phils ₱ 24.67 2500 = ₱ 61,675

It is a freezer box to make ice and preserve food items

X-rays
Sample
Cost data
Photographs

TEAM:

ARTEMIO CARTIS GEA
DANILO DY CEA
ROBERTO ANGELES GEDI
REYNALDO CAMPOS ESSO
ARTEMIO DALAGAN LSCI
JOSE PALOMA LITTON

Team III 70/1/12

(Summary)

: EVAPORATOR SHEET, TUBE AND CHANNELS

① TO REDUCE THE GAUGE OF THE EXTRUDED SHEET FROM .051" TO .040".

② TO REDUCE THE LENGTH OF THE ALUMINUM TUBE CONNECTOR BY 10".

③ ELIMINATE EXTRUDED CHANNELS BY CHANGING THE DESIGN OF THE FLANGES OF THE TUBE AND SHEET.

₱ 16.48		₱ 13.48
X X X		X X X
X X X		X X X
		₱ 3.00
		2,500
ANNUAL SAVING	₱ 7,500	
		X X X
		₱ 7,500

Proposed by: TEAM # III Date: Nov. 13 '71

S-37 (S1-211) 4

SW8623 - BRUSH FUNNEL ASSY. for SABER III & IV

SMC Machine Shop	₱ 72.-	1000 pcs	₱ 72,000

① For clamping bottle during cleaning operation

② Guides brush

③ Guides top end of bottle

* The brush funnel assembly is a six part made of non-ferrous metal which clamps the bottle during the brushing operation

* Parts
① Bushing
② Funnel
③ Funnel Cap
④ Brass stem guide
⑤ Funnel Nut
⑥ Spring

TEAM # 4 members

Luis R. Habana

Ramon Da Costa

Mario Luque

Jose L. Estrera *

Oddeo Leopando

Percival Santiago

Investigated by _____ Date _____

No. 4

BRUSH FUNNEL ASSY. for SCAKER III & IV

(1) CLAMPING BOTTLE (BX) (2) GUIDE BRUSH (S) (3) GUIDE BOTTLE (S)

After value Analyzing the individual parts of the brush funnel Assembly, It was found out that the design of some of these parts could be altered in order to save on material & fabrication cost.

Present cost		Proposed cost
₱72.00	Material	₱57.00
	Labor	
	Overhead	
₱72.00	Total	₱57.00

Unit Saving ₱15.00

Quantity per year 1,000 pcs

Actual saving	₱15,000	21%

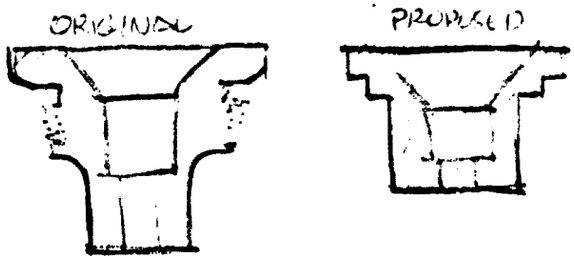
Cost of change ₱610.00

Saving in first year ₱14,390

TEAM No. 4 Value Analysis Seminar Nov 11-14, 1970
DE LA SALLE COLLEGE

Seminar Leaders: (1) Pertti Soderlin (2) [illegible] Calapano

DE LA SALLE COLLEGE
2401 TAFT AVENUE P.O. 406 MANILA PHILIPPINES

PART	PROPOSAL
FUNNEL	Use same material but redesign to reduce amount of material 
FUNNEL NUT	Remove ~~[illegible]~~ funnel & widen entrance of mouth
FUNNEL CAP	Remove thread Change to funnel
BUSHING	Use PVC material

	5

5-Gallon Lug Type Pail

PDC	₱5.45	100,000 units	₱545,000

a) To market oil in 5-gallon volumes

Manufacturing Cost:

Materials: —	₱ 3.74
* Labor to Mfr. -	1.56
Crimping Cost -	0.15
TOTAL -	₱ 5.45

* Total No. of Opns to Mfr = 28

Cost per Opn = ₱ 0.052 (ave.)

TEAM MEMBERS.

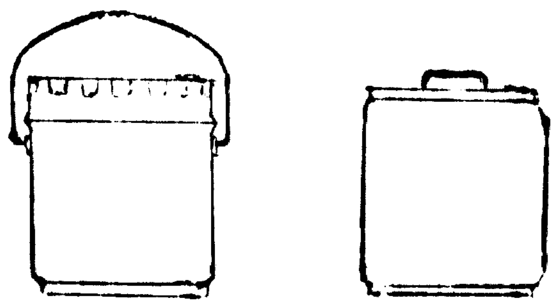
1. Messrs. Keen-Wai Lam - Hongkong
2. Bahram Sadre - Iran
3. Guillermo Gragasin - Phil.
4. Exequiel Escuadro - Phil.
5. Alexander Sim - Phil.
6. Vicente Besin, Jr. - Phil.

Investigated by: Team No. 5 & 6 Date: November 12-13, 1970

Name of Project: FIVE GALLON PAIL

Purpose: TO MARKET OIL IN FIVE GALLON LOTS

Proposal ([illegible] and other sketches and/or description):



The proposal is a closed type pail, i.e., to construct the top similar to the bottom and to use smaller nozzle (similar to those used in Kerosene can) to be [illegible] top. Filling shall be through the spout hole. Attachment of spout and spout hole crimping shall be after filling.

Present Cost		Proposed Cost
₱ 3.74	Materials	₱ 3.305
1.71	Labour	1.17
--	Overhead	--
₱ 5.45	Total	₱ 4.475
	Unit Saving	₱ 0.975
	Quantity per year	100,000 units

ANNUAL SAVING	₱ 97,500.00

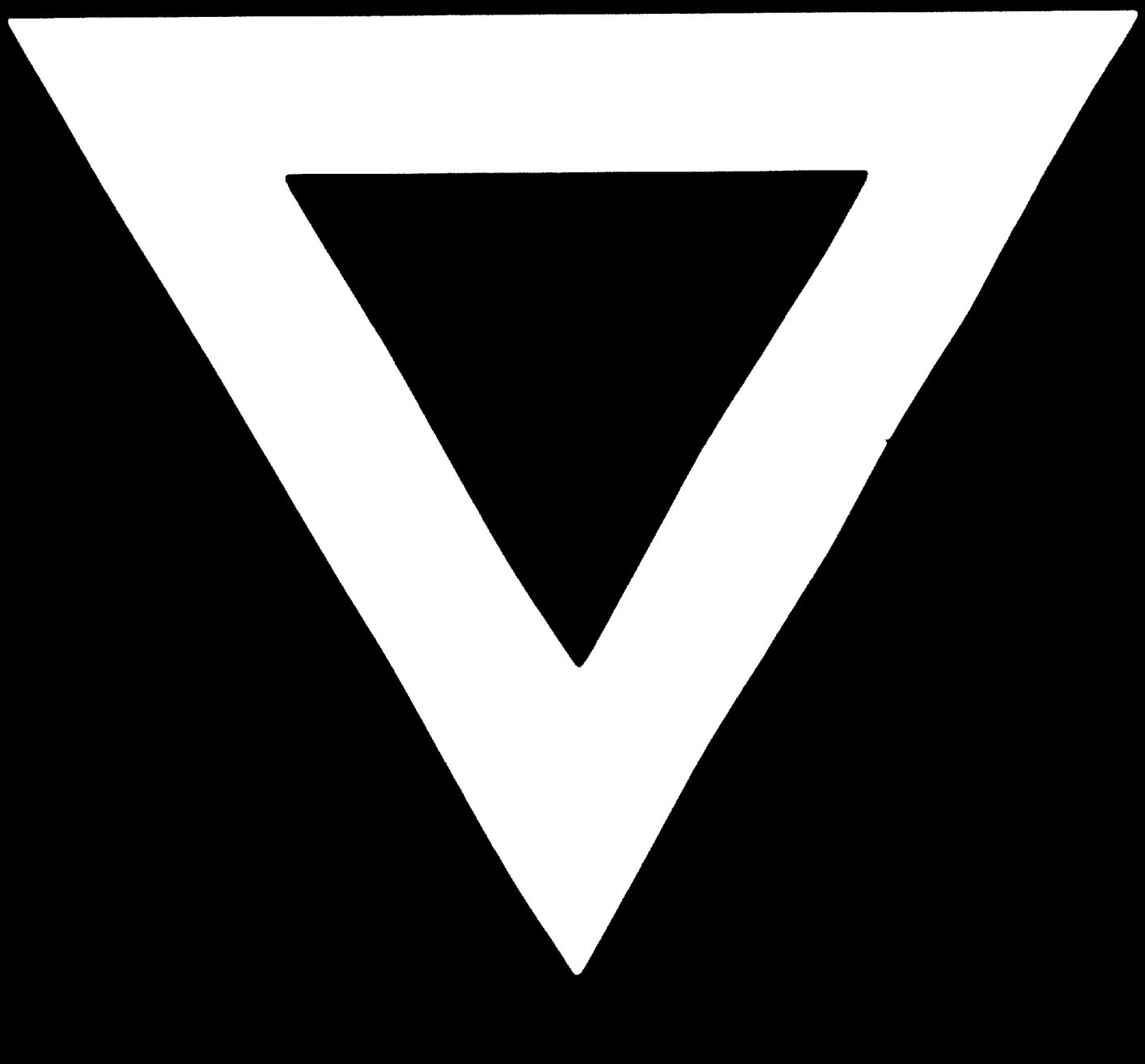
Cost of change: 7500.00

Savings in first year: ₱ 90,000.00

Proposed by: TEAM V – MR. SYED SULEMAN AFZAL
AND VI MR. YOON
MR. [illegible]
MR. SISON
MR. [illegible]

Date: 11-13-70

J-583



84.12.13
AD.86.07
ILL5.5+10