

DE LA SALLE UNIVERSITY – DASMARIÑAS

Dasmariñas, Cavite

**Minimizing the Defects due to
Length Variation of
The Radial Tread in 8x8 Cold Feed Extruder**

A Practicum Study

Presented to

The Faculty of College of Engineering

De La Salle University – Dasmariñas

In Partial Fulfillment

Of the Requirement for the

Degree of Bachelor of Science in

Industrial Engineering

Submitted by:

Quiacos Andriane P.

Submitted to:

Engr. Marluna Urubio

March 2004

AKLATANG ENILIO AGUINALDO ARCHIVES

19 JUN 2004

TABLE OF CONTENTS

	PAGE
Title Page	i
Table of Contents	ii
Acknowledgement	v
Approval Sheet	vi
 CHAPTER 1	
Introduction	
1.1 Background of the Study	1
1.2 Company Profile	3
1.3 Statement of the Problem	6
1.4 Objective of the Study	6
1.5 Significance of the Study	7
1.6 Scopes and Limitation	8
1.7 Methodology	9
1.8 Definition of Terms	12
 CHAPTER 2	
Presentation of Related Literature	
2.1 Floe Process of 8x8 Cold Feed Extruder	13
2.2 Tire Building	14

CHAPTER 3

Presentation of Gathered Data	
Graph 3.1 Scraps in 8x8 Cold Feed Extruder (August 2003 – January 2004)	17
Graph 3.2 Tread Scrap Monitoring (August 2003 – January 2004)	18
Figure 3.3 Costs of Wastes	19
Explanation (Graph 3.1,3.2 Figure 3.3)	20
Figure 3.4 Tread Quality Graph (Cavity #2/ Problematic)	21
Figure 3.5 Tread Quality Graph (Cavity #2/ Ideal)	22
Figure 3.6 Tread Quality Graph (Cavity #1)	23
Explanation (Cavity#1Probematic,Ideal, Cav.#1)	24
Figure 3.8 Production Flow	25

CHAPTER 4

Presentation of Problem Analysis	
5.1 ACA # 1 Installation of Sensor	33
5.2 ACA # 2 Use of an alternative Cutter	38
5.2 ACA # 3 Additional of 1 operator	42

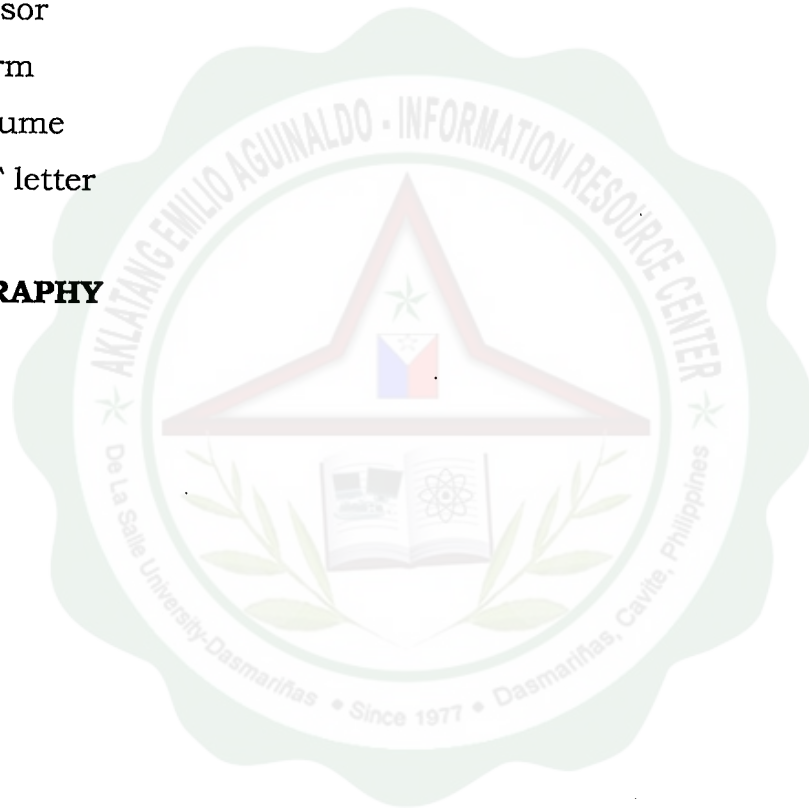
CHAPTER 6

6.1 Conclusion	46
6.2 Recommendation	47
6.3 Costs and Benefit Analysis	49
6.4 Detailed Plan of Action	52

APPENDICES

Tread Cutter
Sensor
Alarm
Resume
OJT letter

BIBLIOGRAPHY



CHAPTER 6

Conclusion Recommendation Cost and Benefit Analysis Detailed Plan of Action

6.1 CONCLUSION

Currently 8x8 cold feed extruder experiencing a loss due to defects especially in tire treads because 20% of a tire component is tread. It is a big factor for the company if the 20% of their component in making a tire is rejected or defected. The average scrap for the past 6 months (September 2003 – February 2004) is 25,693.1 kilograms with the total cost of Php 1,268,083.00 and the main cause of the defect is the length variation in cutting the tire treads because some of the length of the radial tread is not within the specification limit.

Although they can re-mix the defective tire tread in the Banbury Mixer, still it affects the production process and the ability to meet the production output for a day. It also makes a delay on the scheduling on the next process (tire building) and importantly the high quality materials that must be used for radial (car) tread have been diverted to truck tread because of the defects. The material and labor cost also increased because of the rework or reprocess of the non-conformities radial tread.

RECOMMENDATION

Based on the analysis and other observation, Goodyear needs improvement in their 8x8 cold feed extruder.

Here are the alternative solutions:

- Alternative Course of Action # 1
Installation of sensor for the elongation of tire treads
- Alternative Course of Action # 2
Use of an alternative Cutter
- Alternative Course of Action # 3
Additional of 1 operator assigned for the inspection of tire treads before cutting.

The author recommends that the company should install a sensor for the elongation of tire treads.

Installation of sensor for the elongation of tire treads

In this ACA # 1, since the problem of the radial tread is the elongation of the radial tread, there will be an alarm for the operator to know if the tire tread is sagging (beyond 6 inches) from the 8x8 cold feed extruder before the cutting process. And if the operator distinguished the sagging of the tread, he will re-align the tread on its proper level.

ADVANTAGES:

1. It will detect the sagging of the material below the allowable line.
2. It will reduce the scrap that causes the radial tire treatment to be use as a material to the truck tire.
3. It will reduce the length variation on tire tread.
4. It will reduce the reworking process of the treads.

