

Waste Elimination on Hydraulic Hose Product Line

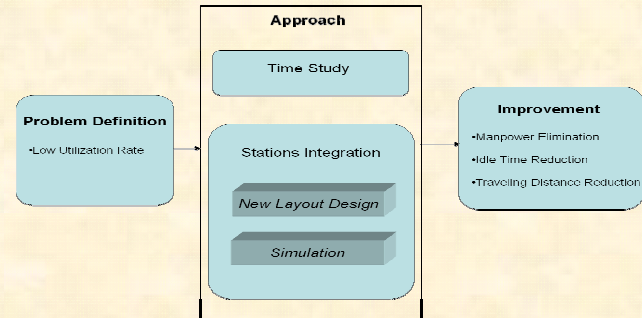
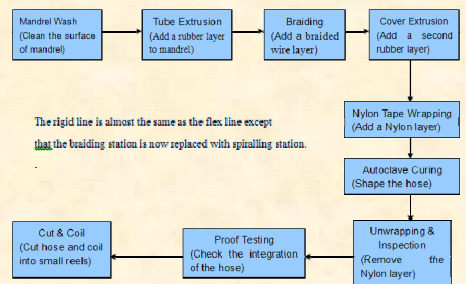


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Introduction

Eaton's Aeroquip Group, headquartered in Maumee, Ohio, is a worldwide leading manufacturer of a wide variety of fluid-conveying and fluid-connecting products. There are two major styles that the company manufactures. One is the braided wire-reinforced (flex line) and the other is the Spiral wire-reinforced (rigid line).

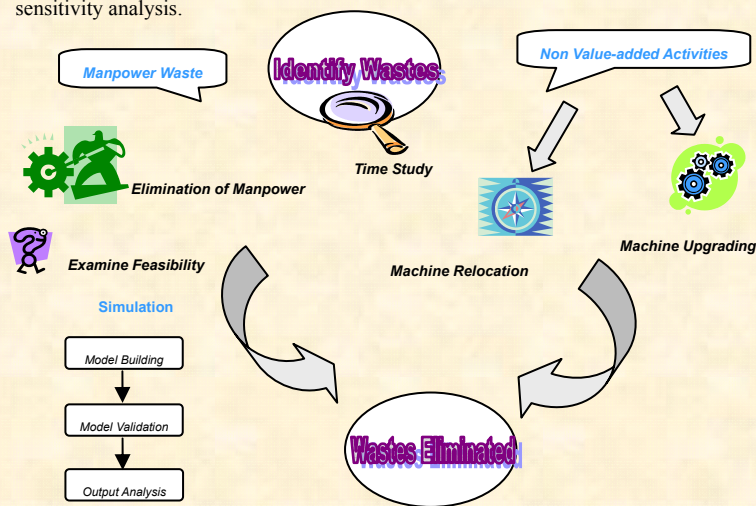


Improvement—Idle Time Reduction

	Original System		Integrated System
	Mandrel Wash	Tube Extrusion	
Operator Utilization	35.10%	45.50%	77.50%
Idle Time Percentage	64.90%	54.50%	22.50%

Project 1-Waste Elimination at Cut and Coil Station

This is the study at cut & coil station which aims to eliminate wastes. Two non value-added activities were identified and corresponding approaches were proposed, namely upgrading the coiling machine and relocation of the wrapping machine. Manpower waste was also identified. Elimination of one operator was proposed and its feasibility was testified by a simulation model followed by sensitivity analysis.



Traveling Distance Reduction

Original Layout (m)	Integrated System (m)	Percentage Reduced
125.66	112.5	11.70%

Project 2 - Manpower Elimination at Tube Extrusion and Mandrel Wash Stations

This study is to eliminate wastes at two non-bottleneck stations by grouping them to form an integrated system where one operator handles both stations concurrently. A new layout to ensure the feasibility of such combination was proposed and the feasibility of such combination was verified by a simulation model.

Project 3 – Operation Scheduling

This study is on the current scheduling system at the bottleneck station. The current heuristic method was investigated and improved by the development of a software program which systemizes and automates the procedures. It reduced both the total processing time and resulting inventory at a significant level which enhanced the efficiency of the scheduling process.

