



### ABSTRACT

Our team worked on solving the backlog issue of Greiner Aerospace by eliminating waste from overall process of CNC foam cutting machine.

### INTRODUCTION

Greiner aerospace is a leading manufacturer for aircraft seats and cushions. Currently it is experiencing backlog of orders due to in efficiency of CNC foam cutting machine. The overall goal of the team is to increase the throughput of the machine by maximizing the amount of time it works on the end product. This can be achieved by identifying and eliminating wastes in the process.

### REFERENCES

IE 4308 Quality, IE 4343 Facility Planning, IE 4303 Production, IE 4344 Human factor.

### METHODOLOGY

#### Define

- The Major contributor to backlog is the CNC machine being bottleneck of the entire process.
- Goal is to increase the efficiency of their CNC foam cutting machine.

Activity	Percentage
Cutting	56.9%
Precutting	4.4%
Place block on machine	10.0%
Remove block	2.2%
Input designs	7.6%
Machine waiting for operator	10.6%
Operator sorting	4.6%
Get new block	3.7%

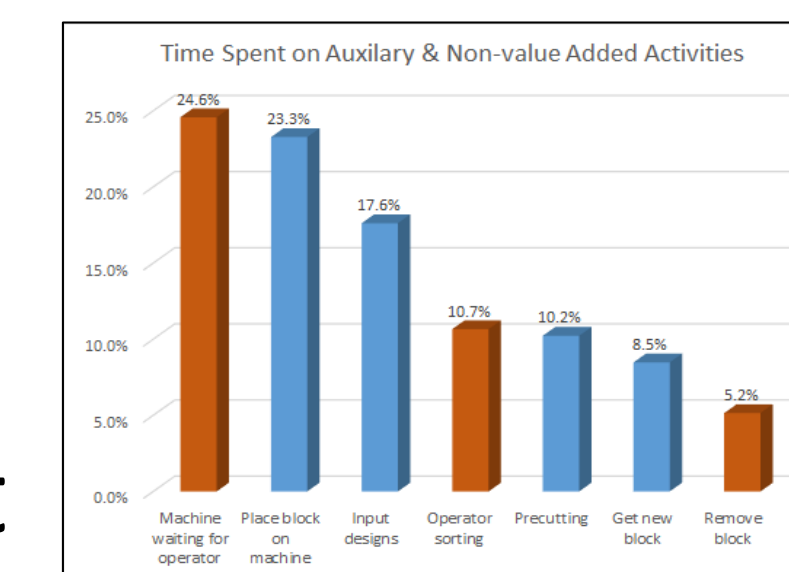
#### Measure

- Machine and operators idle time.
- Overall availability of the machine.
- The time study data.

#### Analyze

- Process flow
- 5-Why Table
- Root Causes analysis

Machine waiting	Operator sorting	Pre-cutting	Remove block	Get new block
Operator cannot see	No handler	Foam isn't present	To place new one	No handler
Sitting adjacent	Handler helping others	Only one machine	Foam falls off	Handler help others
Operator not around	Handler absent	Old machine don't work	Conveyor used improperly	Handler absent
Operator helping others	Operator wants to	Old machine not repaired	Lack of training	Operator wants to
Operator unaware	Ambiguous Roles	Costly repair	No handler	Too much sorting



#### Improve

- Use vertical foam cutter to Precut
- Introduce sound alert system.
- Implement well defined roles and process.

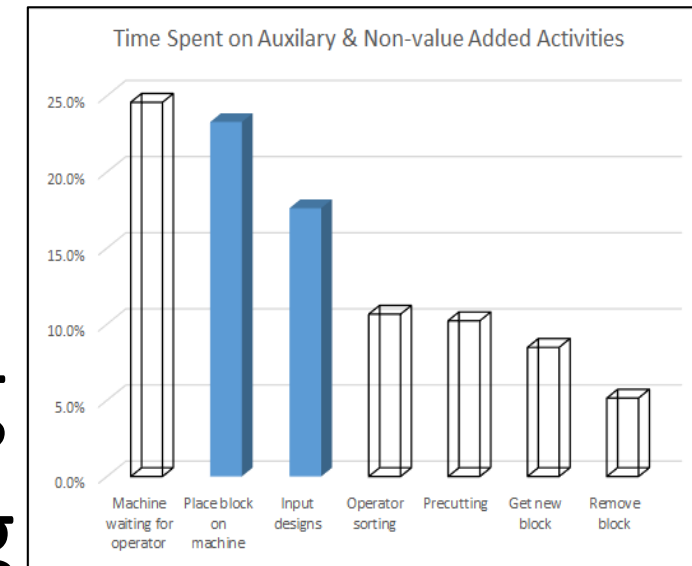
#### Control

- Developed standardized process documentation.
- Implemented periodic monitoring and testing.
- Initiated training and continuous improvement.

### RESULTS

23% time saved by eliminating 4 activities:

- Pre-cutting
- Get New Block
- Operator Sorting
- Machine Waiting



Greiner will be able to save \$7,895 monthly and \$94,740 annually before deducting the suggested implementation cost of \$1,795 every year.

### CONCLUSION

We were able to reduce non value added steps and improve overall process. Engineering standards were set in place for smooth flow of the process. Sustainability plan was established to control and sustain the current improvements.

### FUTURE WORK

Eliminate set up time by introducing a measurement technique that effectively contains the block in a proper position.