

Optimizing an Airplane Generator in the Manufacturing Stage

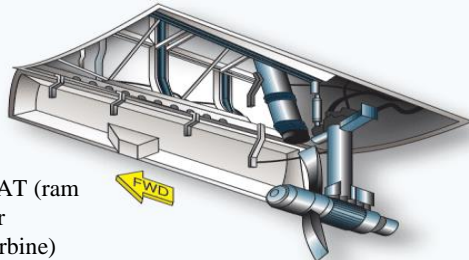
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INTRODUCTION

Airplane generators produce the airplanes energy to sustain all in flight utilities such as: lights, air conditioner, landing gear power, flight instruments, flight control and Airplanes computer. Manufacturing these Airplanes Generators requires expensive machinery and equipment that could only be operated by experienced operators; this is translated in hours of training. When the planning phase and training of the operators finish, the manufacturing process can begin.



RAT (ram air turbine)

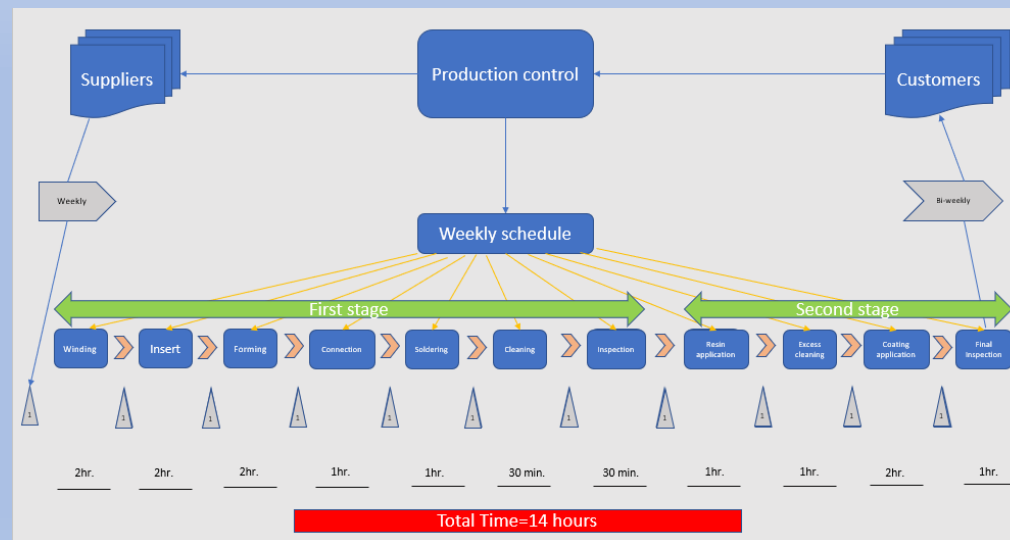
RESEARCH OBJECTIVES

Implementing a newly developed process requires the researcher to consider that new technology is more efficient than the existing one, the manufacturing process can be achieved in less time, and with fewer operators touching the unit. Creating a new design with new process help develop or adapt new technology methodology to existing or obsolete manufacturing processes.

METHODOLOGY

The lean methodology used was Value Stream Mapping. This methodology was used because is the best methodology for a new product development. The Value stream mapping process allows you to create a detailed visualization of all steps in your work process. It is a representation of the flow of goods from the supplier to the customer throughout your organization.

PROCESS ARRANGEMENTS



PROCESS DESIGN

Assembling this core with all the components takes various manufacturing processes. These series of processes are winding, insertion, forming, connection, soldering, cleaning, and inspection. Once the unit is assembled with all the components and passed through all the mention manufacturing process, the unit can then be sent to final stages of the manufacturing processes. These final stages are resin application, excess of resin cleaning, coating, and lastly final inspection.

FINDINGS

As expected, investigating an engineering newly developed design takes times to achieve its full potential. The first thing that is on schedule and needs first attention is how is going to be organize in terms of processes, the first processes are the most crucial of any generator unit because if any fail is not caught on time the issue would be recurring and could make a faulty unit at the end of manufacturing process.



CONCLUSION

To ensure that the product is a reliable one and to reduce any scrap or waste, the implementation of inspection after every process will greatly benefit the manufacturing process. Every inspection should be done by a highly certified and experienced operator to ensure optimal product. . All inspections should be documented and accompanied by test sheets and data analysis if applicable.