



Connecticut Center for Advanced Technology, Inc.

Value Stream Mapping: C-17 Formation Light



Oxley Incorporated is a privately owned US business that supplies electronic components to the defense and aerospace market. They are involved in the design, development and manufacture of aircraft lighting systems for visible, night vision goggle compatible and covert aircraft cockpit and exterior lighting. Oxley Inc. operates an AS9100 quality system and has FAA TSO approvals for external LED lighting products. The Oxley Environmental Policy conforms to the objectives of the Environmental Management Standard ISO 14001:2004 as part of a continuous improvement program.



Introduction

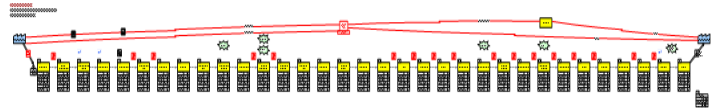
In May 2009, a cross functional CCAT team met with Oxley Incorporated to discuss Value Stream Mapping and a support software package eVSM™. eVSM™ was designed to provide the user with an easy to use tool for implementing the Lean Enterprise Institute methodologies associated with "Learning to See", "Seeing the Whole", Making Material Flow", "Creating Continuous Flow" and "Creating Level Pull". Value Stream mapping is an important visualization tool for supporting the implementation of Lean concepts. The goal when applying this tool is to identify and eliminate waste in a process. While it is primarily a communication tool, it can also be used as a planning and a change management tool.

Methods / Procedures

CCAT worked directly with the Operations Manager and Production Manager from Oxley Incorporated to quickly create an electronic Value Stream Map (VSM) for a C-17 Formation Light Assembly. This VSM was based on an original map that was created with Boeing. The original version used a pre-printed template approach that captured cycle time, changeover time, uptime, number of operators, number of variations, scrap rate, batch size and available working time data. A digital image of a small portion of the original Value Stream Map has been included.



The CCAT team returned in June 2009 to facilitate the mapping of their actual year-to-date current state. This was easily accelerated using the Model Copy eVSM™ feature. The most significant differences were the removal of all processes associated with the flange assembly, the combining of processes and the revision of cycle times. The current state is shown below.



Conclusions

CCAT was able to easily and quickly create both Value Stream Maps using eVSM™. The accurate current state allowed the team to better identify waste (overproduction, inventory, unnecessary transportation, defects, waiting, excessive motion and excessive processing) throughout their process. The VSM also contained summary statistics for total cycle time, lead time and value-added time. The team used a brainstorming approach to guide the creation of a Future State map that focused on the elimination, reduction, simplification and/or the integration of non-value added activities. Kaizen bursts were also added to identify potential improvement opportunities, namely, a new mounting block design, the relocation of the wire, test equipment setup methods, final test data and bar-coding. The Oxley team will be facilitating kaizen events relative to the Future State implementation and feasibility of various options.

References

"CCAT led two VSM initiatives for us recently and the work exceeded my expectations both times. We were able to gain a better insight of our processes, and it proved to be a valuable introduction to eVSM™ which allowed us to update/generate our current and future state VSM's with ease. The CCAT led exercise gave valuable hands on experience to the introduction and implementation Value Stream Mapping. Kaizen events are planned to eliminate waste identified in the map. CCAT was helpful, professional and filled a leadership role for us throughout both projects. I am extremely pleased with the overall results as well as their contribution and have recommended CCAT's aid to my peers."

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For more information

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