

## NEW FACILITY BOOSTS PRODUCTIVITY, MORALE

**ABOUT AIRFORCE AIRGUNS.** AirForce Airguns has been innovating, designing and producing precision pre-charged air guns at their Fort Worth, Texas headquarters for almost 20 years. The company is known for developing the most technologically advanced airgun shooting systems in the world, and enjoys a reputation for flexibility and legendary accuracy. With a team of 20 craftsmen, machinists, and technical support staff, AirForce Airguns offers a solution for just about any airgun shooting situation. Increased product demand prompted the construction of a new manufacturing facility and headquarters building in Burleson, Texas, in 2016.

**THE CHALLENGE.** AirForce Airguns was experiencing growing customer demand combined with numerous flow inefficiencies in its 8,000 sq. ft. facility. The company had simply outgrown its production space, and company leaders made the decision to construct a new, 21,500 sq. ft. manufacturing plant for producing airguns. They contacted TMAC, a NIST MEP affiliate, for assistance in developing the plant layout to optimize process flow and incorporate Lean Manufacturing principles.

**MEP CENTER'S ROLE.** TMAC used a team-based approach for the plant layout project, working closely with key personnel chosen by AirForce Airguns. Before any plant layout work began, the team participated in a training on basic Lean Manufacturing principles, facilitated by TMAC. The project followed the framework of Define, Measure, Analyze, Improve and Control (DMAIC) to ensure the design of the plant upheld Lean principles. Following the DMAIC process, TMAC worked with the team to define requirements and design criteria for the new plant layout. They documented the current state of the facility and equipment on AutoCAD, along with the new facility building footprint.

The current state area maps and arrow diagrams depicted the flow of the various product value streams through the Fort Worth facility, which the team used to develop alternative layout concepts to fit the new building in Burleson. TMAC worked with AirForce Airguns to finalize the plant layout design to meet the design criteria. The process improved employee morale, as the 5S approach to workplace organization (Sort, Set in Order, Shine, Standardize, and Sustain) fostered a sense of pride in the workforce. The new building and layout not only accommodate current production needs, but also provide for the future expansion into new business.

**"The move to a larger facility has long been needed. With the increased space and improved layout, efficiency will continue to increase and we are already planning the implementation of additional in-house production processes."**

-John McCaslin, Owner

## RESULTS



Increased production throughput by **20%**



Strengthened the company culture, improved morale

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