Moonshine and Ergonomics: Sharing the secrets of success

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737 Operations
- Systems and Interiors installation
- Wing to Body Join
- Final Assembly
- Paint and Delivery Center
- Wing Center

The Moonshine Concept
Auspicious origins, but lessons to learn from.

moon-shine (moon’shin') n. 1. A method of disruptive action, that occurs in secrecy, under and around organizational boundaries and procedures, producing order-of-magnitude improvement to any process. 2. A Lean Manufacturing tool that uses fast and inexpensive prototyping to develop and prove a concept, prior to full implementation.

"Try storming!"
Simulate, test, model, prototype and experiment before committing to any one process or solution. The PHYSICAL nature of this research will lead to ideas previously impossible to originate. The learning is in the DOING, (not through meetings, or drawings, or computing, or delegating)

Moonshine Headquarters

Moonshine Team Results
Try-Storming vs. Brainstorming accelerates learning
Moonshine team worked with Lean Manufacturing in prototyping many processes and equipment for the moving assembly line.

Moonshine Team Results

Final Assembly Ergonomics
- Aircraft is the work station
- Workforce age
- “Integrated systems”
- “Off-the-shelf” solutions are rare
- Material Handling and Work Positioning issues

Working together
- Ergonomist and Moonshine work together.
- Moonshine is part of Lean and Safety teams.
- Moonshine adept at “usability.”
- Moonshine team responds with urgency, which fixes problems and builds morale.

Moonshine solutions
- Seating

Moonshine Solutions
- Material Handling and Hand Tools

Moonshine solutions
- Focused workshops
Moonshine solutions
Problems big and small

The team: Do they exist? Do you create?
Partner and make a case
Lean manufacturing results have to be real
Document the improvements and show off; recognize and congratulate
Gain trust: Solve employee-identified problems with employee-identified solutions
Who pays for this?

Welcome to the 787

Ergonomics: Physical Modeling
Reduce soft tissue injuries over rates and cost that exist in legacy programs
- Ergonomists dedicated to the program from the beginning
- Ergonomics program requirements developed from historical injury data
- Ergonomics checklist and training provided as awareness and verification tool

Design for Ergonomics

The Boeing 787 Dreamliner: More Than an Airplane

Strong Demand
International Collaboration
Continued Progress
Enhanced Experience
International Collaboration
Optimized Design

Conclusions

- Unique problems require unique problem-solving methods
- Moonshine team continues to be engaged in ergonomics

“Moonshine, continuously improve forever and you will succeed.”
- Sensei Nakao

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Questions?
Thank You!

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