



Case Study: CNH Industrial Ergonomic and Assembly Analysis with Optimisation

The Aim of the Project

With the large number of vehicle specifications and options assembled at the CNH Industrial Basildon plant, which makes products for the Company's New Holland Agriculture and Case IH brands, maximising efficient production was a significant challenge from both an assembly and material flow perspective. CNH Industrial hoped to create a template for the enhanced, sustainable deployment of advanced lean techniques within a 'New Assembly Line Standard'. Specific assistance was sought from HSSMI within Automation, Process Planning and Ergonomics such that these could be utilised as a standard for future CNH Industrial assembly line installations. The overall intention was to enable a dedicated team of both HSSMI and CNH Industrial Engineers to support this project from planning through to production, with specific support in work standardisation, ergonomics, 5S, visual team processes and lean material flow.

The Challenge

CNH Industrial were introducing a new, much larger product to their Basildon assembly plant however the new product was in fact too large to be produced on their existing "Post Paint" assembly line. Therefore HSSMI were requested to plan and develop a new stand alone 'Post Paint Assembly Line'.

The Solution

The activity successfully implemented changes within the cost budget, achieving improvements in all of the key objective areas. An important outcome of the activity was the successful installation of a new production facility which met the key objectives.

A “State of the Art” Automated Guided Vehicle (AGV) system was introduced to take first-stage built tractors from the paint area to and through the post paint assembly line.

The outcomes of the project included improvements in the following areas: line side sub assembly; operator efficiency through improved ergonomics, and inventory accuracy – by part location and by quantity. In particular, a focused improvement on the assembly process was followed to reduce the number of reported build defects.

The Duration

This was a 1.5 year project which began in January 2014, during which the following objectives were achieved:

1. Implementation of an improved Assembly Process from current line practices
2. The planning and installation of a flexible/movable assembly system
3. Creation of a standardised work method
4. A positive impact on key metrics (e.g.) defects per unit, inventory accuracy and tractor production rates
5. Implementation of a 5S standard
6. Improved assembly line ergonomics
7. Sustainable changes

Members of the Project

HSSMI and CNH Industrial (Basildon)

Satwik Mehta
Virtual Engineering Manager
Satwik.Mehta@hssmi.org

Lee Appleton
Technical Lead
Lee.Appleton@hssmi.org