Standardization of Boeing Tooling Communication and Information

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INTRODUCTION

What is Tooling at Boeing?

Tooling at Boeing refers to unique structures and equipment built for very specific production needs (Fig. 1 + 2). All tools at Boeing are individualized and do NOT refer to traditional tools such as drills, hammers, screwdrivers, etc. Tools vary in scale, from drill to hull templates.

Problem Statement

Tooling fulfillment is inconsistent and fails to meet projected schedules in the 767 Line, resulting in an increasingly large backlog. There are currently 99 old open orders dating back five years.

Goal

To improve communication, accountability, and order visibility in the Tooling Value Stream (TVS) to prevent and address tooling order delays.

METHODOLOGY

Interviews & Surveys:

Surveyed the work processes and opinions of various TVS roles on tooling delays and the impacts those delays have on their work.

Conducted multiple interviews with 7 TVS members in roles ranging from Tooling Engineer Manager to Tooling Integration Analyst.

Interview Results:

Our interviews revealed some of the problem spots within the TVS:

- "There are different ways of including buffer and overhead times so maybe Boeing could better align how we schedule orders" - Anonymous Boeing Employee.
- "This is a 24 hour business with 3 shifts. Communication between shifts is where there is a break down." - Anonymous Boeing Employee.

Data Analysis

We analyzed non-value added (NVA) time at each station by comparing the estimated flow time & process time. This enabled us to see the relative quantities of time spent at each station. We found that the CMA - construction station processed with the highest average NVA time (42.53%, in Fig. 3) due to the uncommon causes* (Fig. 4).

*Causes: Lacking capacity/materials, downtime, etc.

Future Considerations

Further process investigation will take place such as:

- Hiring IEs for second and third shift support
- Verifying actual capacity and amount of material prior to accepting orders
- Increasing standard process time by 1σ
- Addressing unforeseen changes and additional rescheduling
- Redefining roles to improve order ownership

CONCLUSION

To address the root causes of the tooling delays, our project solution focused on improving communication, accountability, and visibility within the TVS.

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