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Part I: Overview of Business

- Collins Aerospace - Manchester Branch
- Collins Aerospace, created by the 2018 combination of UTC Aerospace Systems and Rockwell Collins, has helped shape the aerospace and defense industry in pivotal ways for more than a century with over 70,000 employees working across 30 countries..
- Founded in 1933 as Collins Radio, today, Rockwell Collins, Inc. designs, produces, markets and supports electronic communications, avionics and in-flight entertainment systems for commercial, military and government customers worldwide.
- Collins Aerospace in Manchester, Iowa opened January 10, 1977. It is known as the Active Matrix Liquid Crystal Display (AMLCD) Center of Excellence. AMLCDs are used in a host of display products across both commercial and military market segments.

Part II: Job Specifics

- My main task was analyzing how a department operates and to look for a better flow of the work to increase productivity.
- I will be working primarily with two teams.
- Each of these teams have three stations and each station can handle most of the work that comes to the team, but there is certain work that can only be done on one of the stations and other work that can only be done on another of the stations.
- So my goal is to put together a plan that allows for the work to flow more efficiently through this department with the equipment and operators that are available.

Part III: Introduce the Problem

- You have 80 different parts that will be traveling through your manufacturing process where you have three stations A,B, and C.
- Assuming each part takes the same amount of time to travel through your process, create a plan of how the work will flow through you and how many employees do you need to get 80 parts through each day?

Part IV: Background

- 60 parts can go through all three stations.
- 5 parts can go through only station C.
- 10 parts can go through station A or C.
- 5 parts can only go through station B.
- It takes 20 minutes for the part to complete your manufacturing process.
- Employees operate at 85% efficiency on average.
- 406 minutes are available for a worker(this would be a worker at 100% efficiency)

Part V: Business Solution

- We first had to compile all the necessary data(not all the parts had the same time to get through as in the scenario); the run time of machines, the touch time of the employees, which products can be used on certain machines, etc.
- Next we used an excel tool that had been created within the company to begin analyzing workloads to better prepare employees with future workloads.

Part VI: Student Solutions

- Guessing and checking until they find a possible route.
- Setting up a system of equations and trying to find an intersection point or using a matrix to analyze the system.