

**CASE STUDY**

# Lean Food Production

## Celebration Foods

**■ PROBLEM / CHALLENGE**

This producer of Carvel<sup>®</sup> ice cream cakes consolidated production from two facilities to a larger new greenfield site. The new factory operated at 60% of demand, months after start-up, requiring one of the old plants to remain open. Each week the old plant had to operate cost \$70,000. In addition, waste was 30% over budget in the new plant.

The basic operations were 'casting' the vanilla and chocolate cakes of different sizes then decorating the cakes. If the cakes are not decorated and moved to the freezer 30 minutes after casting they will melt (waste).

This was a very high volume operation with one cake produced approximately every 5 seconds or over 15,000 per day.

**■ LEAN ASSESSMENT – ROOT CAUSES**

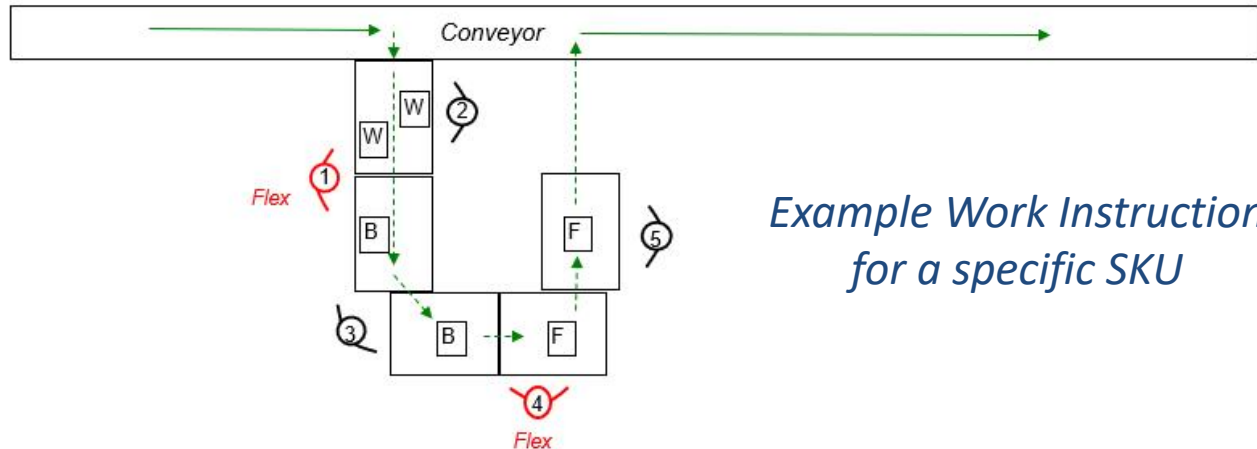
- **Material Availability**
  - Basic supplies needed for cake decorating (whiting, bordering, other decorative bordering, sprinkles) not always available to decorators
  - Inconsistent system to replenish supplies
- **Organization of Work**
  - Roles and responsibilities of decoration teams (3 – 5 people) not standardized
  - Decorators were not cross-trained or incented to flex to different operations as needed
- **Visibility of Hourly and Shift Goals**
  - Decorators did not know their output per hour versus goal
  - No overall measure of cumulative production versus hour and shift goal
- **Backing Up Cake Casting**
  - Minor disruptions of cake casting caused loss of productivity of decorators. There was no back-up of cast cakes to ensure decorators had emergency supply of cakes.



## WORKSTATION LAYOUT – VISUAL WORKS INSTRUCTION

### 106 Ounce Sheet Happy Birthday

1.72	White - "W"
1.37	Border - "B"
1.91	Final Decorators - "F"
4.99	Total People
925	Cakes per shift



*Example Work Instruction  
for a specific SKU*

## IMPLEMENTATION DETAILS VISUAL FACTORY: Visual Works Instructions

- Created visual work instruction of decorator workstation with layout & roles for every cake SKU
  - Calculated operational staffing and workstation layout for 5 person teams
  - Projected each visual work instruction on an interior wall during production so it was visible by all production teams
  - Built flexing (red people in the image above) into labor plan, requiring cross-training
  - Exact staffing requirements and shift output created robust throughput expectations and bonus criteria.

## IMPLEMENTATION DETAILS VISUAL FACTORY: Kanban

- Set up 2-bin kanban system for all materials used on the current cake-in-production
  - Kanban shelves are no more than 15 feet away from every decorator team
  - Kanban bins of decorating supplies are changed-over to match the current cake-in-production
  - Material handlers replenished hourly

## RESULTS

- Increased throughput 80%, meeting expected production rate
- Decreased waste 70%+ by speeding up production

Reference: Tim Shanley, CEO