

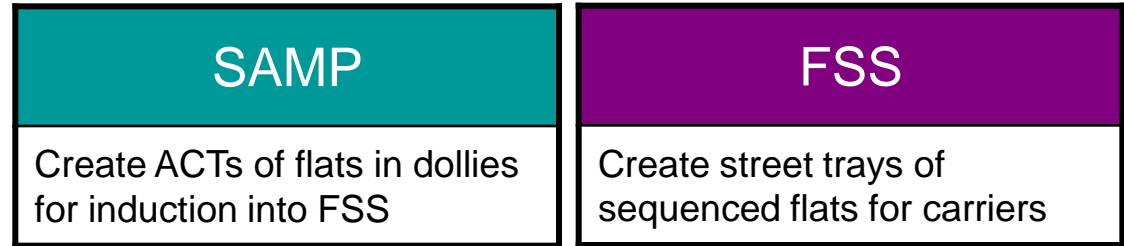
Flats Sequencing System

Staffing

Systems Engineering

May 15, 2009

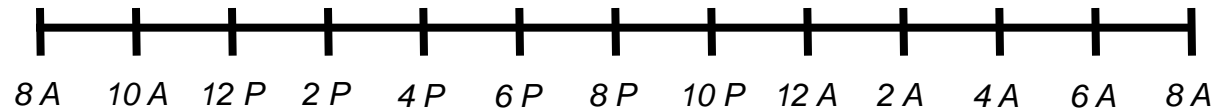
- What we will cover...
 - What are the tasks?
 - When are they performed?
 - How many operators?
 - Seasonal challenges



Prep-Ahead (1 to 2 Hr)



Sequence



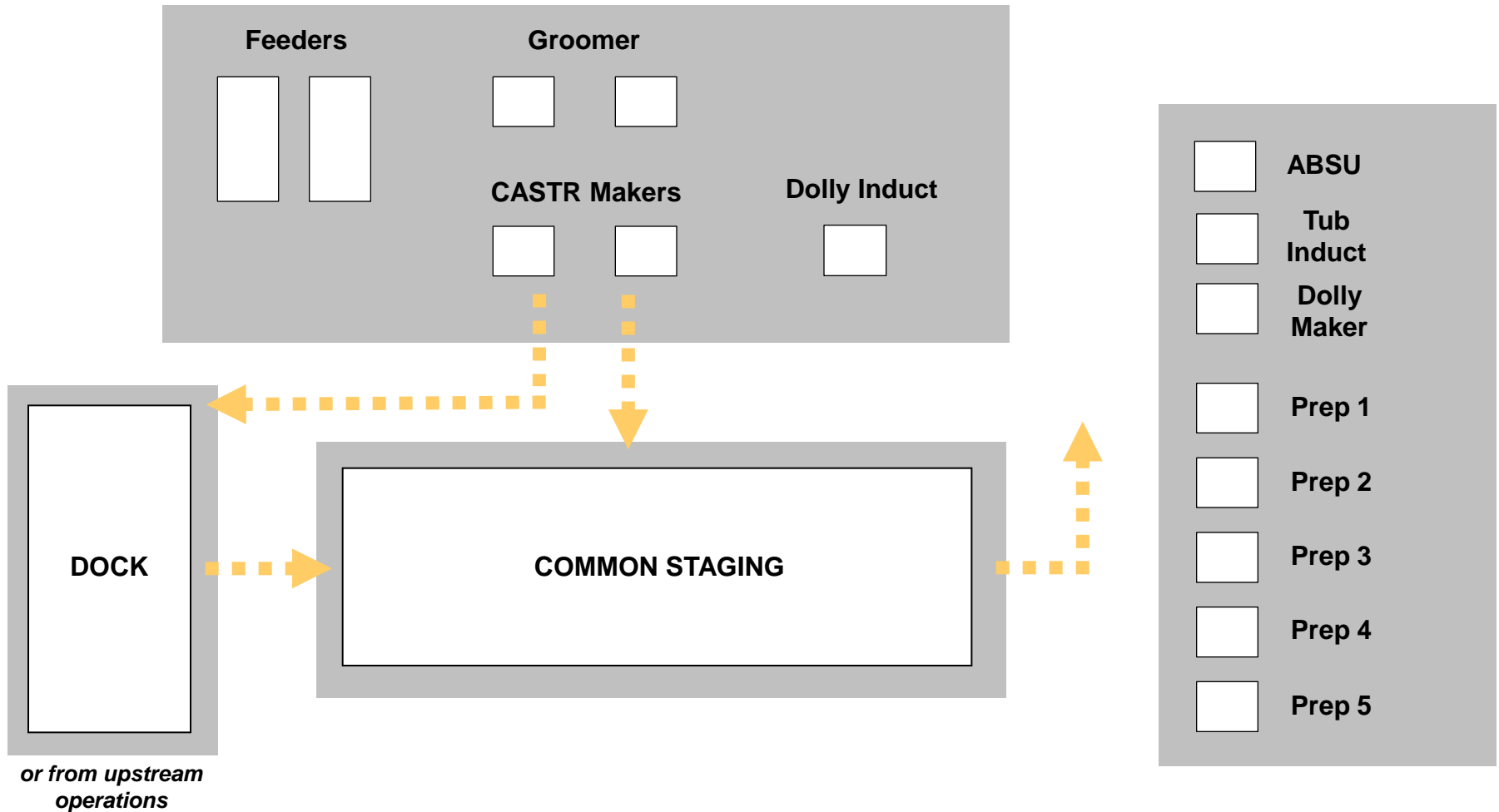
- SAMP throughput should mirror FSS throughput.
- SAMP schedule should be just-in-time to support FSS runs (balance risk of feeder starvation with availability of mail)

	SAMP	FSS
	Create ACTs of flats in dollies for induction into FSS	Create street trays of sequenced flats for carriers
Prepping bundles and loose pieces in flat tubs	✓ 1-5 prep stations	
Switching out full and empty containers	✓ 1 ABSU 1 Dolly Maker	✓ 1 Dolly Induct 2 CASTR Makers
Monitoring feeders (grooming, clearing jams)		✓ 4 feeders (2 feed lines)
Monitoring ITCs (grooming, clearing jams)		✓ 2 ITCs
Transporting containers into and out of the FSS work area		

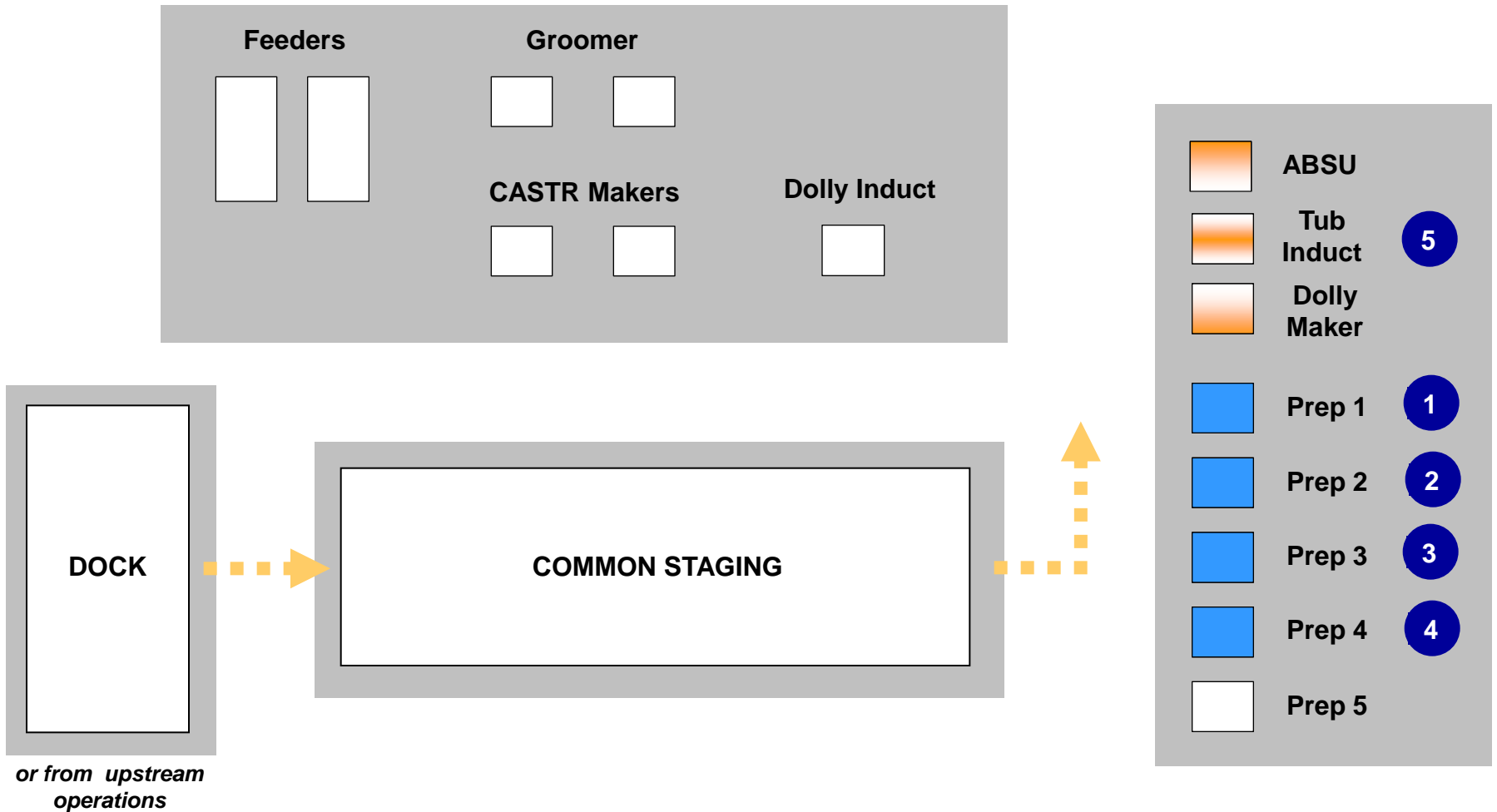


Existing LDC 17 work hours

Staffing Requirements Throughout the Day



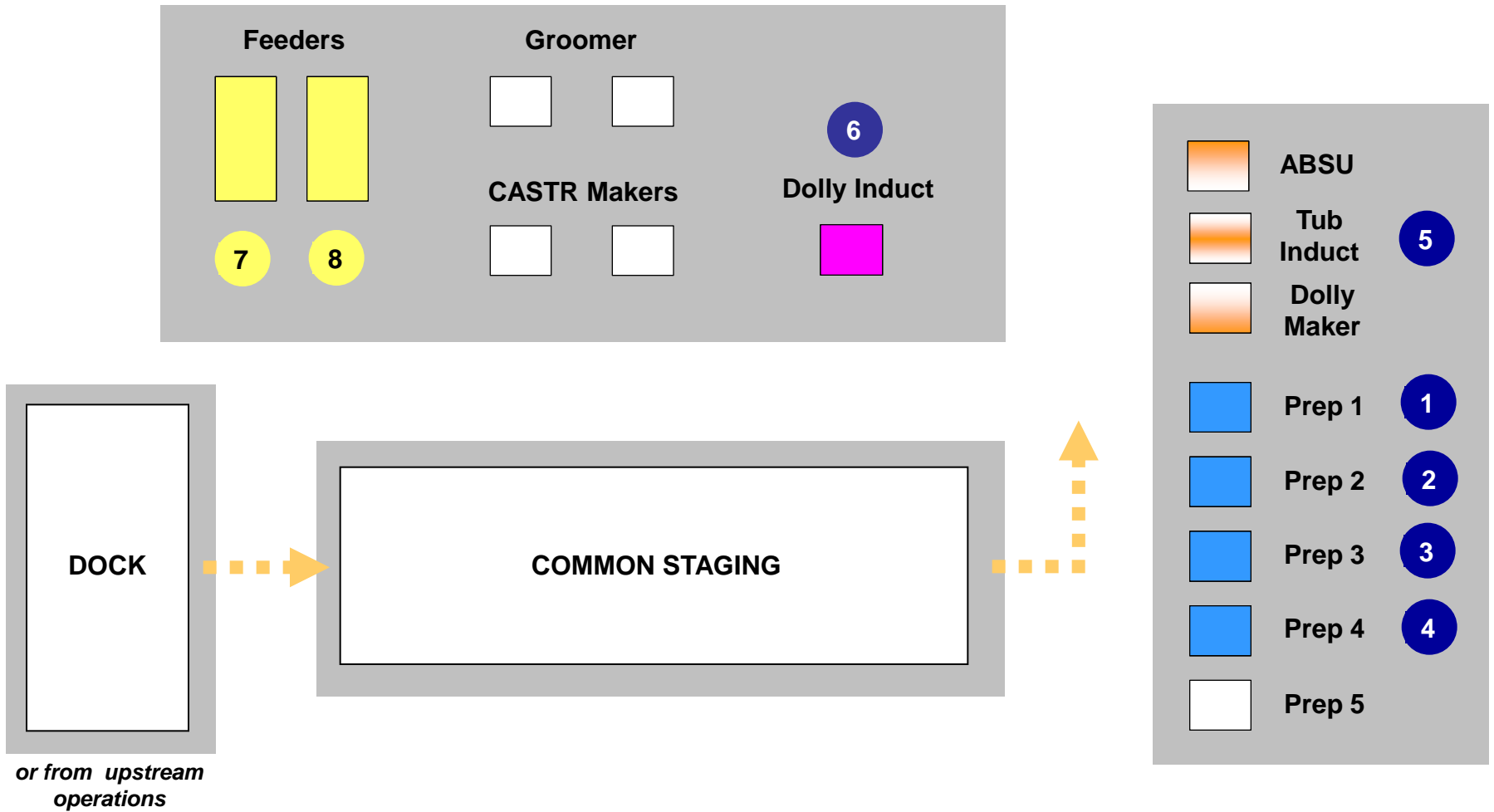
Container Movement: Existing LDC 17 work



10:50 am – Prep Ahead

SAMP

- Synchronize with sorter schedule
 - FSS throughput 16,500
 - SAMP throughput (150 ACTs/hr x 110 pcs/ACT) 16,500
- Staff with 5 MH (4 prep stations and 1 ABSU / Dolly Maker)
- Shut down for lunch is a possibility
- Breaks supplemented with either MH from Dolly Induct or by another MH, or by reducing one prep station



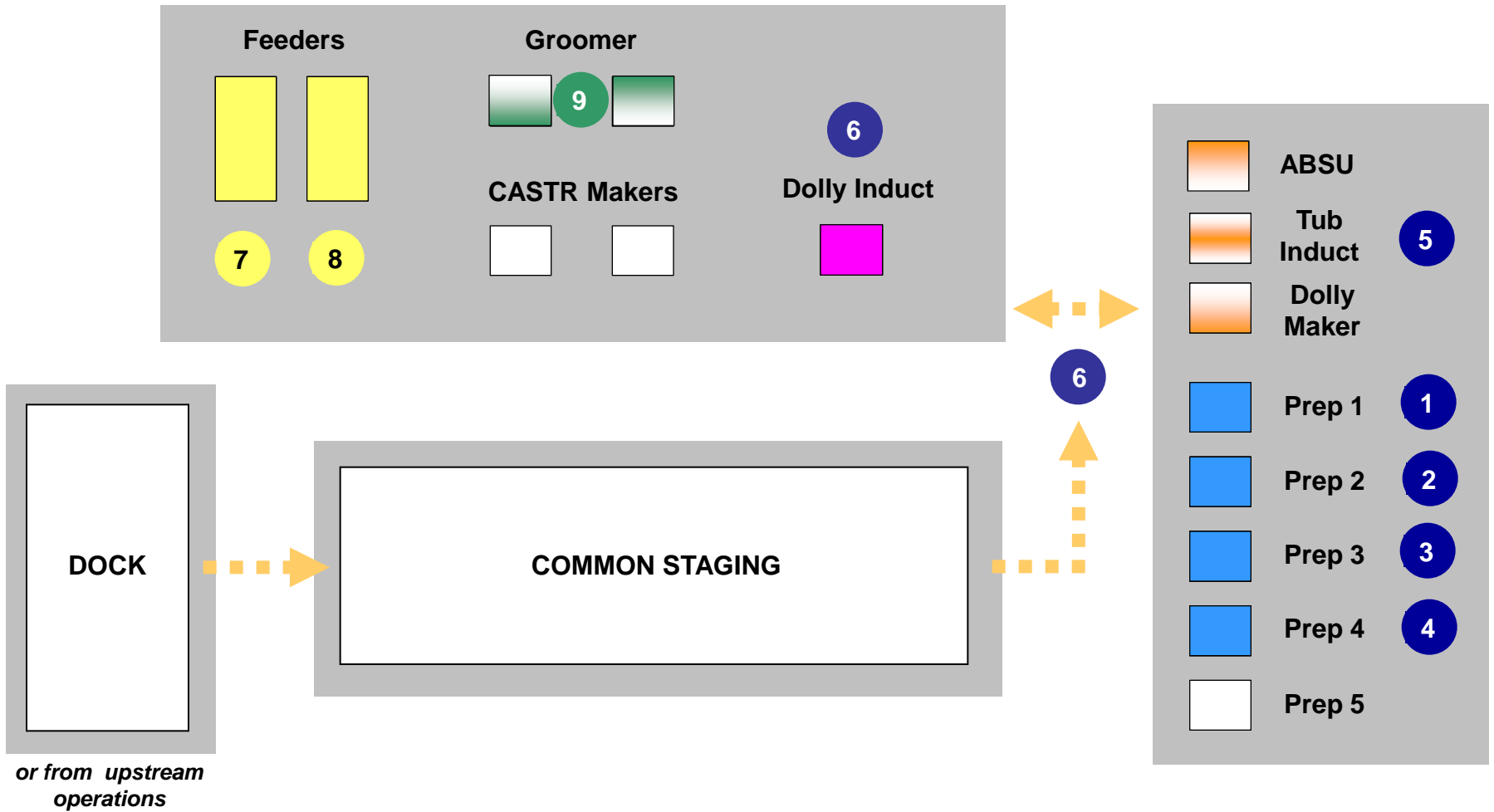
12:50 pm – Run 1 Pass 1

Dolly Induct Operator

- MH - Only staffed during Pass 1, or a total of roughly 8½ hours per 17 hour day
- Dolly Induct operator moves empty dollies back to SAMP and brings full dollies to staging
- Dolly Induct operator takes lunch and breaks during Pass 2 cycles
- Other available time can be used to relieve other MH

Feeders

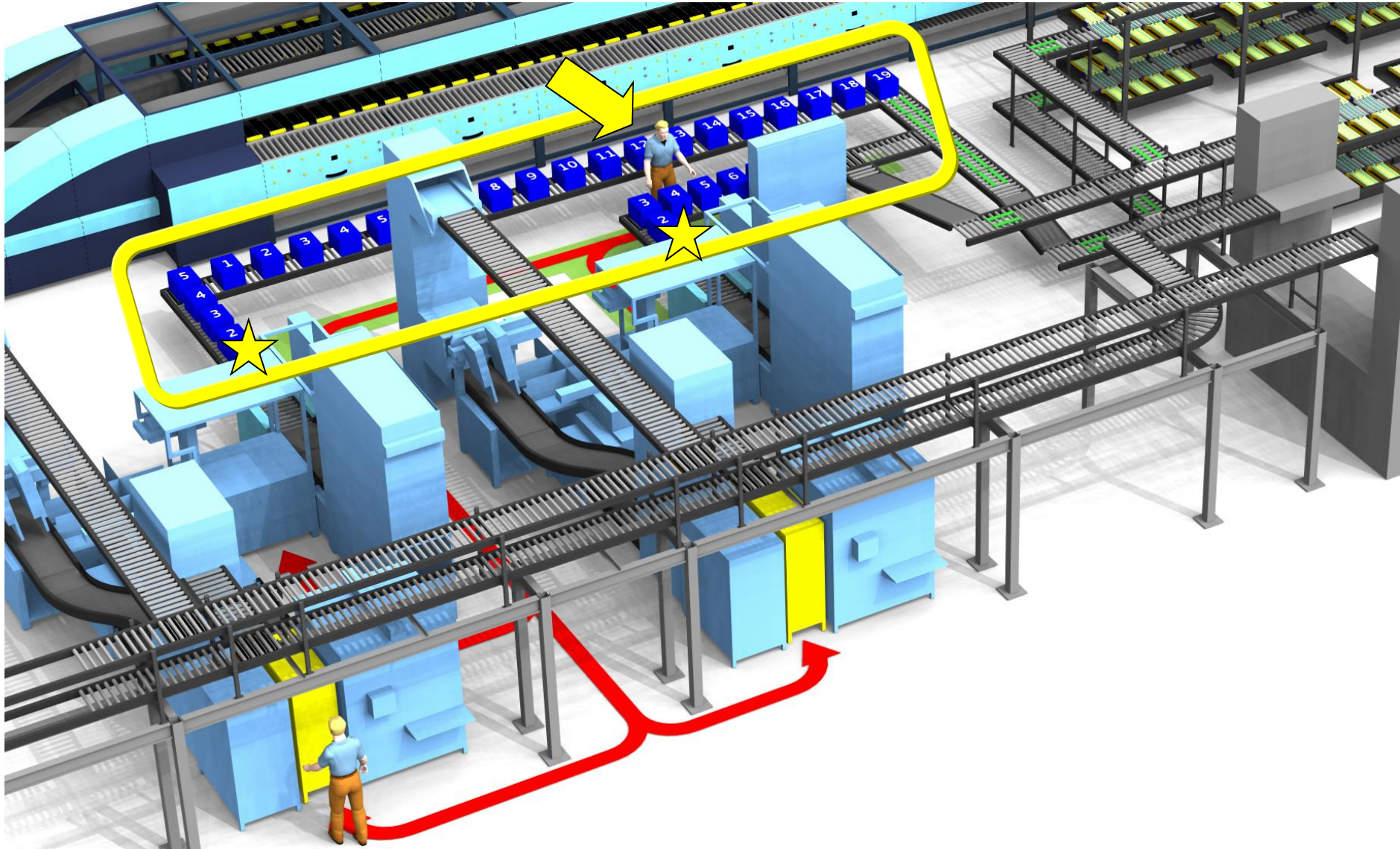
- 2 Clerks - each assigned to monitor 2 feeders
- Important role in achieving high throughput
- Lunches and breaks must be supplemented with another clerk
- Add one relief clerk per each two FSS on each shift

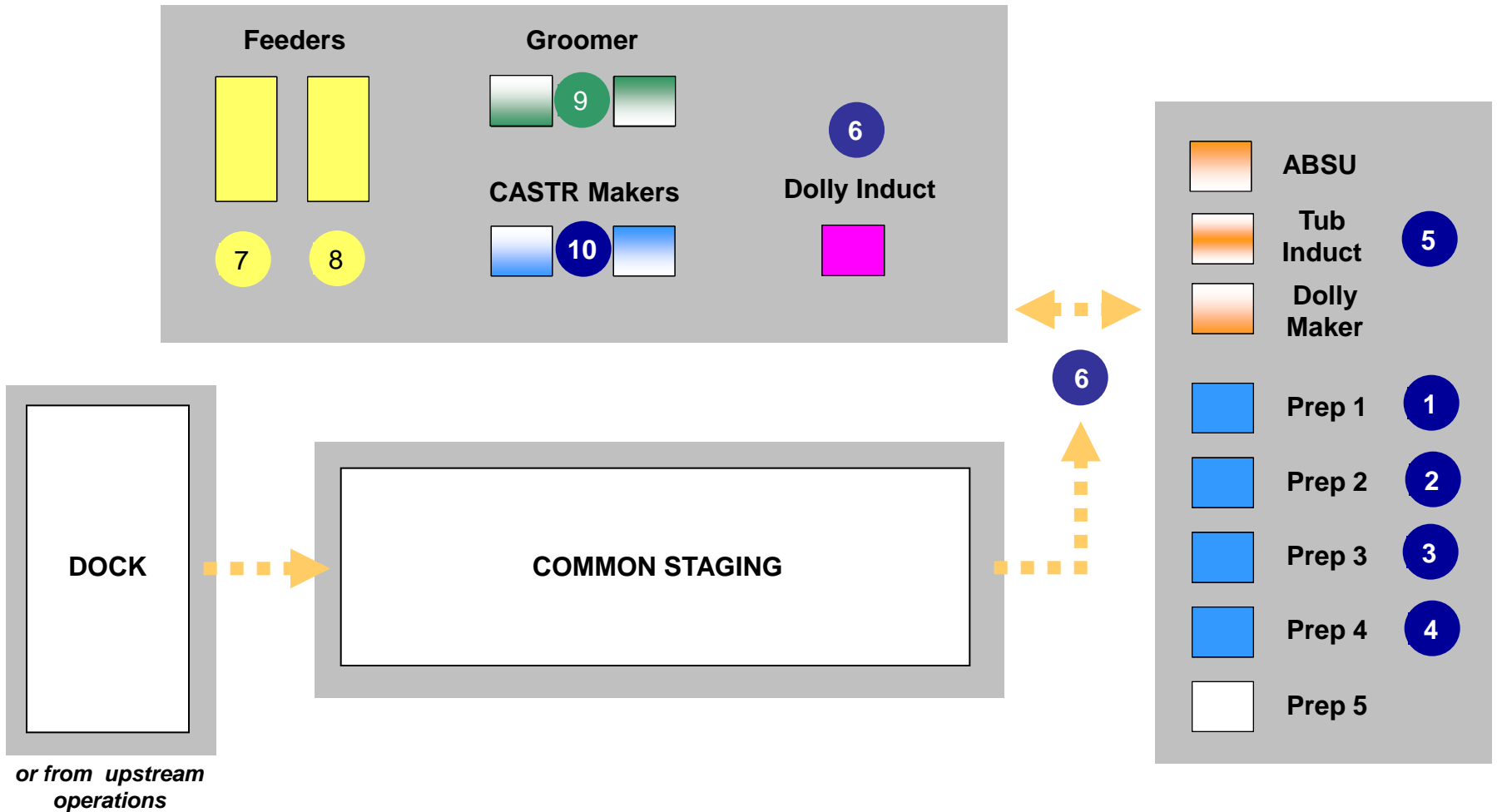


1:40 pm – Run 1 Pass 2

Groomer

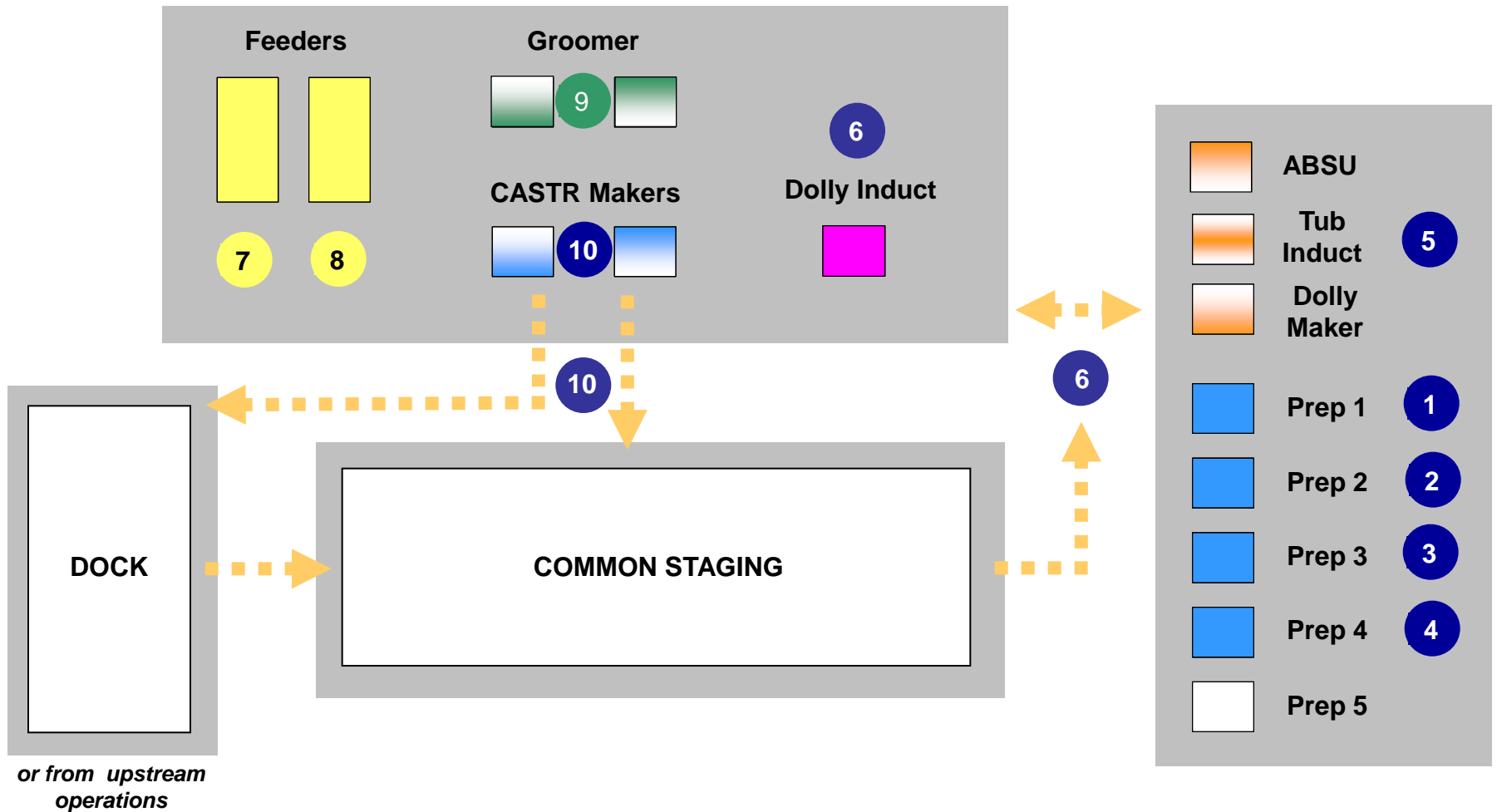
- Grooms RCTs on conveyors entering both ITCs
- Clears ITC jams when he/she is the closest person to the jam



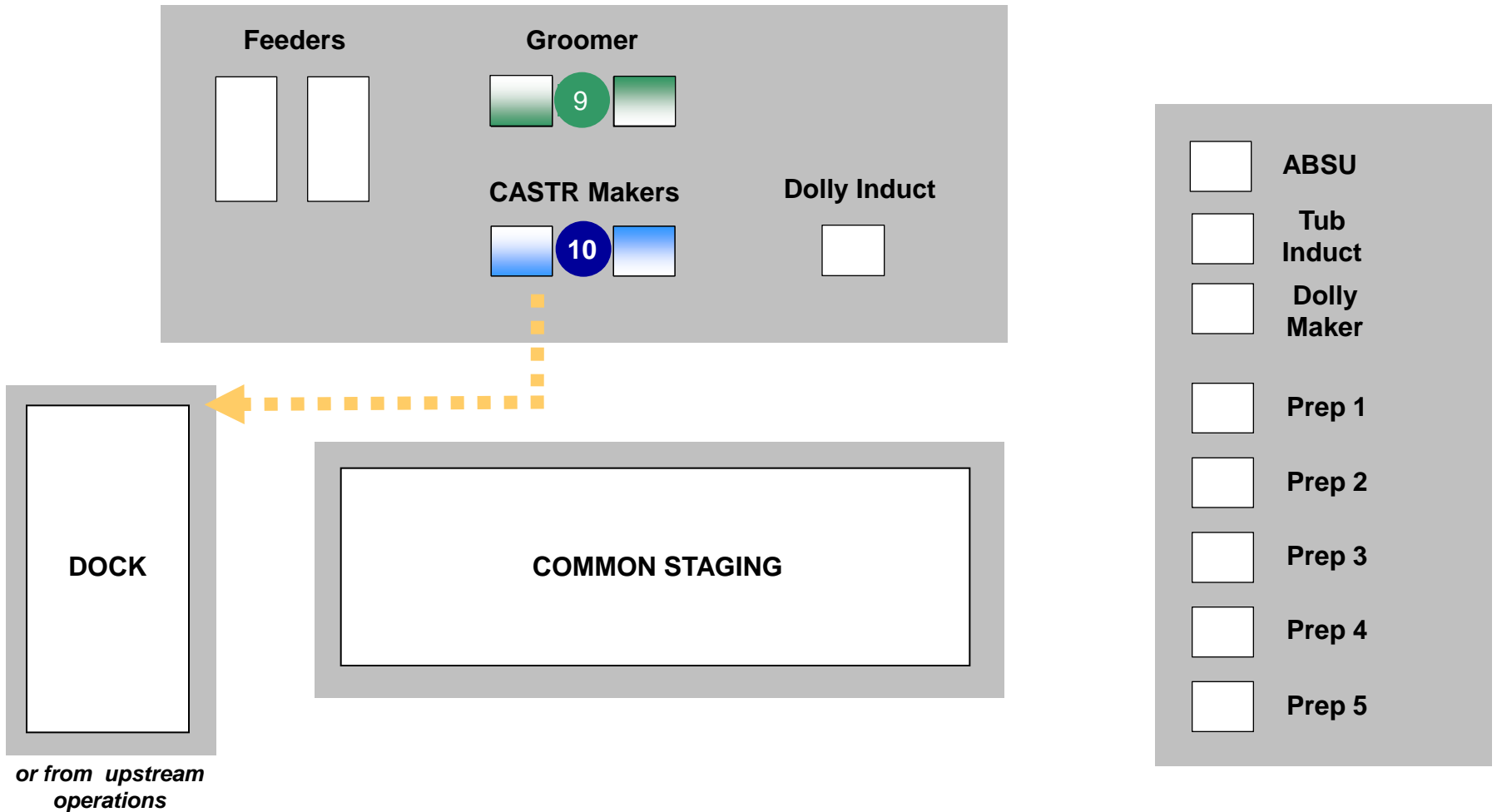


CASTR Maker Operator

- MH - assigned to service 2 CASTR Makers
- Primary jobs are to:
 - Bring empty CASTRs to CASTR Maker
 - Switch out CASTRs
 - Move full CASTRs away from CASTR Maker
- Clears ITC jams when he/she is the closest to the jam
- Lunch and breaks can be provided by relief MH



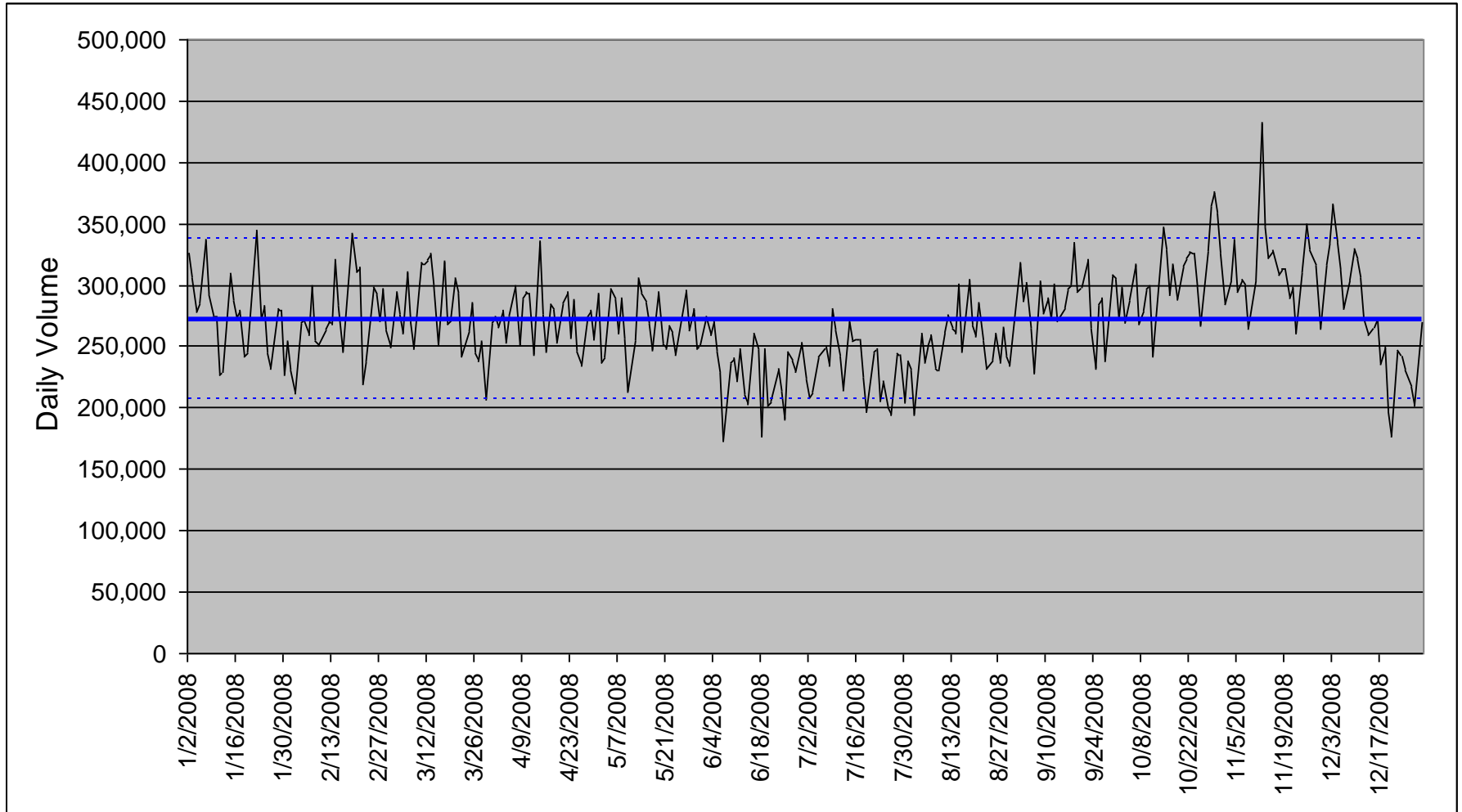
3:20 pm – Run 2 Pass 2



5:00 am – Final Run CASTR Making

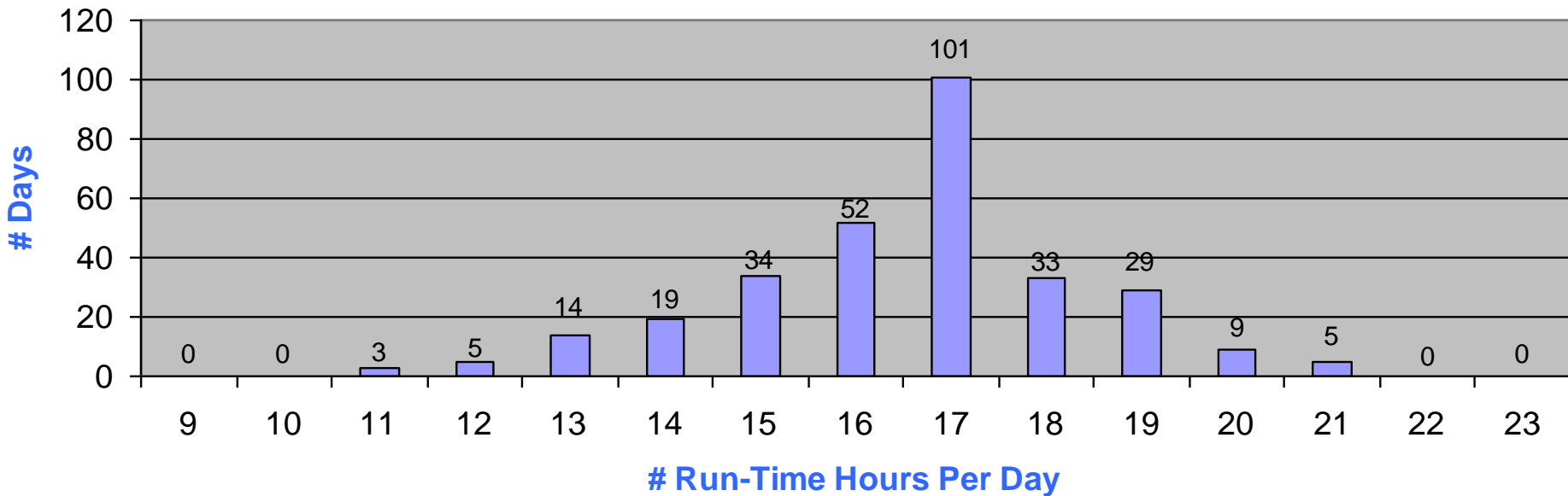
Challenges Presented by Seasonal Volume Variability

Northern New Jersey Machine #4



Northern New Jersey Machine #4

FSS Daily Run-Time Analysis - Load Balancing Rules



Seasonal Volume Variability

- Backfill lunches and breaks when daily window is ≥ 17 hours *(don't shut down the process)*
- Shut down for lunches and breaks when daily window is ≤ 15 hours
- Start time ~ 12:00 noon (prep 10:00-11:00 am) when daily window 15-17 hours
- Delay start time when daily window < 15 hours
- Advance start time when daily window > 17 hours

Closing

- ❑ Crew size
 - DAR assumption 10 operators
 - Current assessment 10 operators
 - Validation @ Dulles May-Aug 09
- ❑ SAMP and FSS schedules must be synchronized
- ❑ Some FSS tasks change with machine phase
- ❑ Existing LDC 17 work hours for container transport
- ❑ Scheduling strategies
 - Lunches and breaks
 - Seasonal volume variability
- ❑ Likely economies of scale for multiple machines