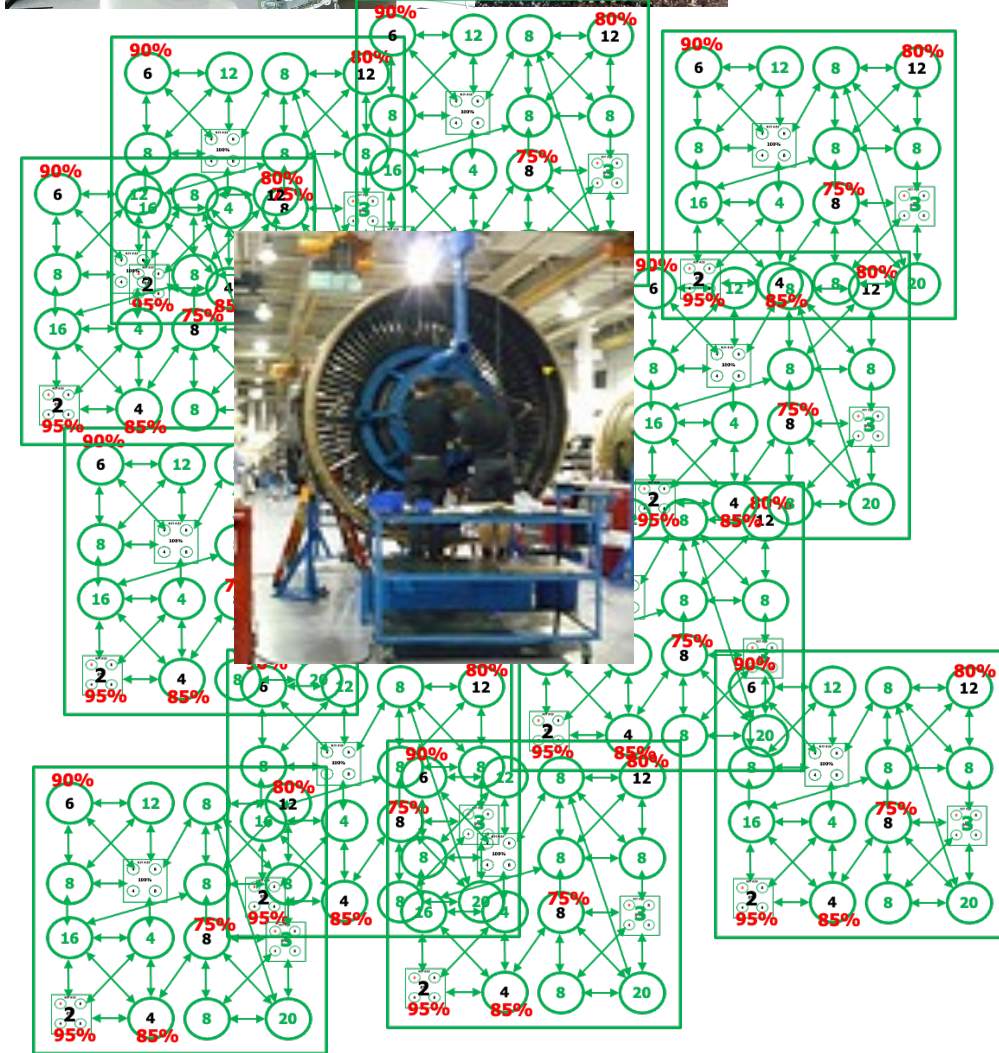


 DELTA
TechOps





Baseline:

- Non-Union #1 Most Productive even with 80% of mechanics waiting on parts**
- Cost Center**
- 8% Aircraft on Ground from Eng Maint**
- 3 Years of Lean Struggle**
- Stuck with thousands of material shortages**

Objectives:

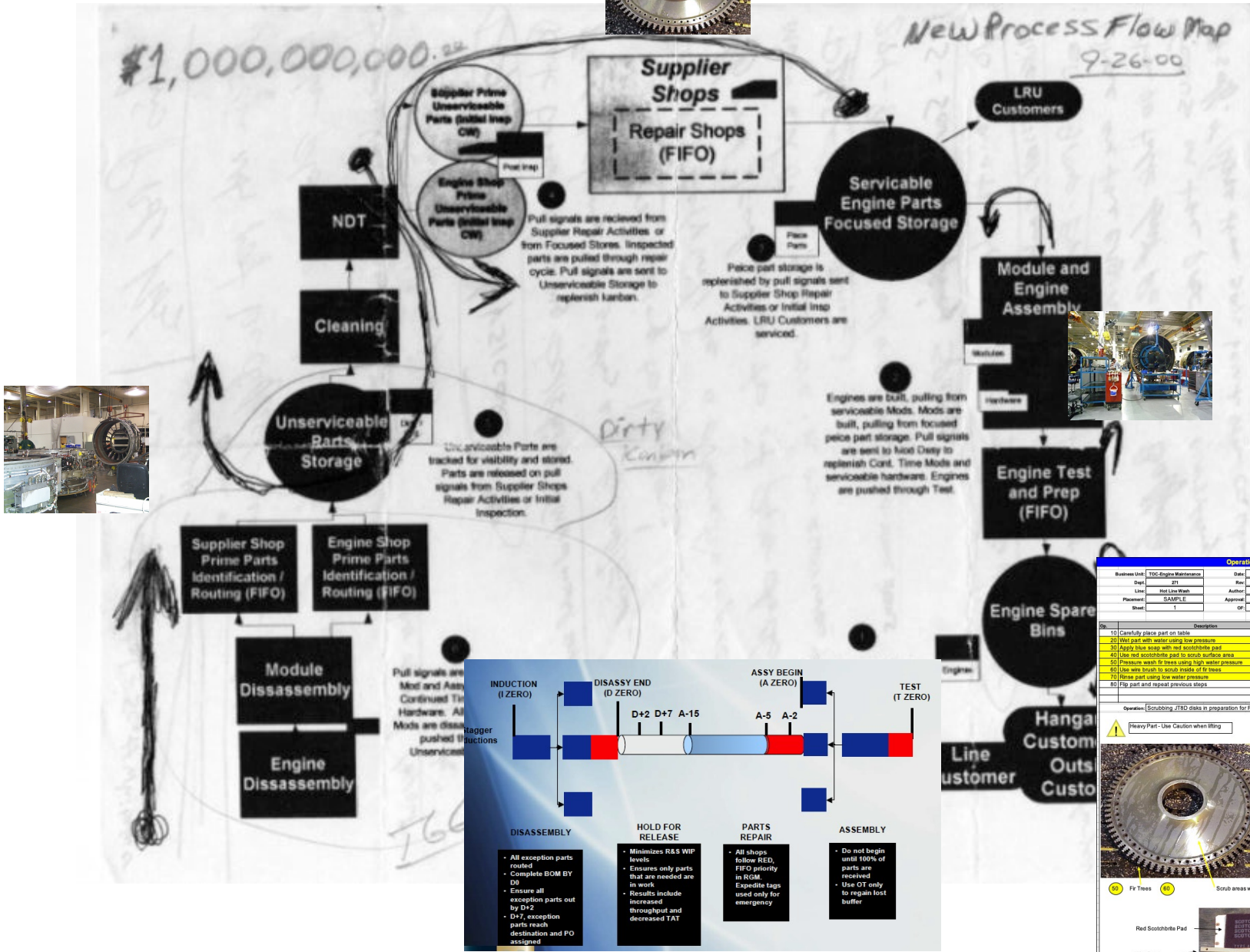
- Cost Center to Profit Center**
- Insource \$100M of Competitor Business**
- 0 AOG from Eng Maint**
- Eliminate Mat Shortages**

Engine MRO Revenue Reaches \$1B

| Measure | 2000 | 2002 | 2018 |
|------------------------|-------------|-------------|---------------|
| Parts/Eng | 30,000 | 30,000 | 30,000 |
| FAA Mechanics | 1,800 | 1,600 | 1,500 |
| Supplier Defects | 18% | 12% | 10% |
| Supplier Rework | 14% | 10% | 8% |
| Production – Eng/Month | 35 | 50 | 82 |
| Lead-Time (Turn-Time) | 8 Months | 8 Weeks | 6 Weeks |
| Open Work Orders | 20,000 | 1,200 | 1,600 |
| WIP Inventory - Turns | .5 | 3 | 7 |
| Aircraft On Ground | 8% | 0% | 0% |
| External Customers | 0 | 50% | 80% |
| Revenue | 100% | 320% | 1,100% |



'Dirty Kanban' Flow Map – Pull Forward/Backward



| Operational Method Sheet | | | |
|--------------------------|------------------------|----------|---------|
| Business Unit | TQC-Engine Maintenance | Date | 9/26/00 |
| Dept | 271 | Rev | |
| Line | Red Line Wash | Author | JTB/DAK |
| Placement | SAW/E | Approved | |
| Sheet | 1 | OR | 1 |

| Op | Description | Qty | Part/Kit | Draw. |
|----|--|-----|----------|-------|
| 10 | Carefully place part on table | | | |
| 20 | Wet part with water using low pressure | | | |
| 30 | Apply blue areas with red scotchbrite pad | | | |
| 40 | Use red scotchbrite pad to scrub surface areas | | | |
| 50 | Pressure wash fit tracks using high water pressure | | | |
| 60 | Use wire brush to scrub inside of fit tracks | | | |
| 70 | Rinse part using low water pressure | | | |
| 80 | Flip part and repeat previous steps | | | |

Operation: [Scrubbing JTB/D disks in preparation for FPI inspection]

Warning: Heavy Part - Use Caution when lifting

50 Fir Trees 60 Scrub areas with Red Scotchbrite 70 Fir Trees 80

Red Scotchbrite Pad

Wire Brush

Required PPE: Safety Glasses, Apron, Face Shield, Rubber Boots, Rubber Gloves