Achieving Inventory Accuracy

G.L. (Jerry) Kilty, CFPIM, CIRM, CSCP
727 725-7674
qmsjerry@tampabay.rr.com
Two Messages Today

- Data must be accurate
- Best way to audit records
Is your company taking a periodic inventory?

a. Yes

b. No
Is your company doing cycle counts?

a. Yes
b. No
c. Maybe
Data Integrity

- Customer data bases
- Suppliers data bases
- Bills of materials
- Inventory records
Data Integrity

- Lead time data
- Capacity data
- Information flows
Inventory Accuracy Calculations
## Inventory Accuracy Calculations

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Shelf Count</th>
<th>Inventory Record</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>95</td>
<td>100</td>
</tr>
<tr>
<td>2</td>
<td>99</td>
<td>100</td>
</tr>
<tr>
<td>3</td>
<td>101</td>
<td>100</td>
</tr>
<tr>
<td>Total</td>
<td>295</td>
<td>300</td>
</tr>
</tbody>
</table>

Accuracy = \( \frac{295}{300} \)  
Or 98.3 %
## Inventory Accuracy Calculations

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Shelf Inventory Count</th>
<th>Record</th>
<th>Accuracy Calculation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>95</td>
<td>100</td>
<td>95 %</td>
</tr>
<tr>
<td>2</td>
<td>99</td>
<td>100</td>
<td>99 %</td>
</tr>
<tr>
<td>3</td>
<td>101</td>
<td>100</td>
<td>99 %</td>
</tr>
<tr>
<td>Total</td>
<td>295</td>
<td>300</td>
<td></td>
</tr>
</tbody>
</table>

Accuracy = Avg. of the three  
Or 97.7 %
Inventory Accuracy Calculations

1. Financial ($$$$$)
2. Planning (Units with tolerances)
3. Production (Units w/o tolerances)
## Financial ($$$)

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Unit Cost</th>
<th>Shelf Count</th>
<th>Inventory Record</th>
<th>Adjustment Unit</th>
<th>Financial Adjustment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$10</td>
<td>95</td>
<td>100</td>
<td>- 5</td>
<td>- 50</td>
</tr>
<tr>
<td>2</td>
<td>$30</td>
<td>99</td>
<td>100</td>
<td>- 1</td>
<td>- 30</td>
</tr>
<tr>
<td>3</td>
<td>$80</td>
<td>101</td>
<td>100</td>
<td>+ 1</td>
<td>+ 80</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>295</td>
<td>300</td>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

No Financial Adjustment
100 % Accurate
## Planning (Units w. Tolerances)

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Tolerance</th>
<th>Shelf Count</th>
<th>Inventory Record</th>
<th>Within Tolerance</th>
<th>Outside Tolerance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>7%</td>
<td>95</td>
<td>100</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>3%</td>
<td>99</td>
<td>100</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>0%</td>
<td>101</td>
<td>100</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>295</td>
<td>300</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Accuracy = \(\frac{2}{3}\)  
Or 67%
## Production (Units)

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Shelf Count</th>
<th>Inventory Record</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>95</td>
<td>100</td>
<td>Wrong</td>
</tr>
<tr>
<td>2</td>
<td>99</td>
<td>100</td>
<td>Wrong</td>
</tr>
<tr>
<td>3</td>
<td>101</td>
<td>100</td>
<td>Wrong</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>295</strong></td>
<td><strong>300</strong></td>
<td></td>
</tr>
</tbody>
</table>

*Accuracy = 0/3 or 0%*
Sigma Levels

- Level
- 6
- 5
- 4
- 3
- 2
- 1

- Defects per Million
- 3.4
- 233
- 6,210
- 66,807
- 308,537
- 690,000
Which method of measurement does your company use?

a. Financial
b. Planning
c. Production
d. All of above
e. Don’t know
Auditing the Records

- The annual physical will adjust the records
- Cycle counting will correct the problems!
Why take a Physical Inventory?

FINANCIAL!
Physical Inventory

- Expensive
- Time consuming
- Exhausting
- Creates more inaccuracies
Cycle Counting

The Solution!
Cycle Counting

- Sample counts
- Every day
- Investigate as to cause
- Trained personnel
- Corrective action implemented
Cycle Counting Methods

1. Count and adjust
2. Quick fix
3. Long lasting accuracy
1. Count and Adjust

- Popular, but not effective
- Does not correct the record
- Does not identify problems
- Does not replace the need for a physical inventory
2. Quick Fix

- Report honestly
- Don’t use random generators
- Select with a bias for improvement
- Cycle Counting Done Right
Cycle Counting Done Right!

- A specific approach to fix serious accuracy problems
- A 5-step method
The 5 Step Quick Fix Process

1. Select Control Sample
   - Select based on degree of problems; No Tolerances

2. Count Sample
   - Count each week Until perfect

3. Measure and Record Accuracy
   - Be Brutally Honest

4. Investigate Causes
   - Root Cause Analysis

5. Fix the Problem
   - Sustain the Improvement

The Association for Operations Management

Advancing Productivity, Innovation, and Competitive Success
Quick Fix Method Summary

- If record accuracy is below 95%
- Control sample
- Count on a periodic and frequent basis
- Measure & investigate as to cause
- Performed by trained personnel
- Corrective action implemented
- Does not replace physical inventories
3. Long Lasting Accurate Inventory Records

- Accuracy maintenance
- Count frequency determined
  - “A” = 12
  - “B” = 4
  - “C” = 2
- Does replace the annual physical inventory!
ABC Classification

- 20% of the items = 80% of the value
- 30% of the items = 15% of the value
- 50% of the items = 5% of the value
Cycle Counting Frequency

- “A” = 12 → 4
- “B” = 4 → 2
- “C” = 2 → 1
## Cycle Counting vs. Physical Inventory

<table>
<thead>
<tr>
<th>Cycle Counting</th>
<th>Physical Inventory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Investigates the causes and fixes them</td>
<td>Does not do a cause analysis</td>
</tr>
<tr>
<td>Requires continuous effort</td>
<td>Is exhaustive when done, but over a short time</td>
</tr>
<tr>
<td>Requires trained personnel</td>
<td>Everybody is involved</td>
</tr>
</tbody>
</table>

**Cycle Counting**
- Investigates the causes and fixes them
- Requires continuous effort
- Requires trained personnel

**Physical Inventory**
- Does not do a cause analysis
- Is exhaustive when done, but over a short time
- Everybody is involved
What’s your Company’s Inventory Accuracy?

a. 99 – 100%
b. 97 – 98%
c. 95 – 96%
d. Low – 95%
e. Don’t know
The End

- Thank You!

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