

Hattiesburg Plant Unplanned Parts Reduction

Hattiesburg Unplanned Parts

Project Charter

1.0 Executive Summary

The project goal is to minimize the number of unplanned parts and associated NCRs, thus resulting in a reduced CNIS.

2.0 Project Objectives

To reduce CNIS associated with scrap and rework. The measurement for parts accountability would be the reduction of NCRs associated with re-run or lost parts.

3.0 Project Scope

3.1 Project Deliverables

The deliverables of the project are to provide a defined process for movement of parts from raw materials to finished goods. Also, to provide standard measurements that will indicate the effectiveness of the project, and allow control of the process (i.e. scrap and material usage measurements, and reduced NCRs associated with sheet metal rework processes).

3.2 Boundaries

The project process boundaries are at the start of the turret press program, to either the Bill of Lading for a unit, or the successful re-nesting, running, and installation of a lost or damaged part.

4.0 Business Case

The current data indicates that total cost of re-nested NCRs is an annual \$76,000 opportunity. This value is based on an annualized set of NCRs taken over a 2-month period.

5.0 Project Organization

Team Member	Role	Responsibility	Time Commitment
Greg Thrash	Champion	Guide, and direct the efforts of the BB candidate by means of showing the shop layout, material flow process, and handling procedures	Part
John Ard	Black Belt Candidate		Full
Michael Moore	Black Belt	Guide, and direct the efforts of the BB candidate by selecting indicators, data collection methods, data analysis, and display	Part

6.0 Project Assumptions

The primary project assumption is that the occurrence of unplanned parts within the plant will be either significantly reduced, or eliminated.

Data Collection Plan

- Collect NCRs from January and February 2000.
- Separate NCRs into categories to segregate the causes of each NCR.

Process Profile Worksheet

Process:	Unplanned parts
Process Owner:	Greg Thrash
Boundaries:	<u>Starts when:</u> Start of the turret press program <u>Ends when:</u> Bill of lading of a finished unit, or replacement of part.
Links:	Design, Drafting, Vendor, Planning, Quality
Output:	Assembly Parts
Input:	Sheetmetal from supplier
Materials:	Sheetmetal
Environment:	Inside, open to outside temperature and humidity.
Skills:	People trained in production process with average length of service being two years.

NCR Cost From Jan. thru Feb 2000

NCR #	GA	SQ. FT	\$/SQ.FT.	GALV. \$	\$/NEST	MACH TIME	BRAKE TIME	Lost Time	Re-Run
4067	8	20	\$1.96	\$39.20	\$9.77	\$12.44	\$2.96	\$29.62	\$94.00
747	8	33.3	\$1.96	\$65.33	\$9.77	\$12.44	\$2.96	\$29.62	\$120.12
10025	10	3.33	\$1.58	\$5.26	\$9.77	\$12.44	\$2.96	\$29.62	\$60.06
3685	10	9.03	\$1.58	\$14.27	\$9.77	\$12.44	\$2.96	\$29.62	\$69.06
1184	10	16	\$1.58	\$25.28	\$9.77	\$12.44	\$2.96	\$29.62	\$80.08
3761	10	16.2	\$1.58	\$25.58	\$9.77	\$12.44	\$2.96	\$29.62	\$80.38
3761	10	24	\$1.58	\$37.92	\$9.77	\$12.44	\$2.96	\$29.62	\$92.72
4067	10	32	\$1.58	\$50.56	\$9.77	\$12.44	\$2.96	\$29.62	\$105.36
10023	10	48	\$1.58	\$75.84	\$9.77	\$12.44	\$2.96	\$29.62	\$130.64
3793	12	16.5	\$1.22	\$20.17	\$9.77	\$9.77	\$2.96	\$29.62	\$72.30
4049	12	32	\$1.22	\$39.04	\$9.77	\$9.77	\$2.96	\$29.62	\$91.17
10026	12	40	\$1.22	\$48.80	\$9.77	\$9.77	\$2.96	\$29.62	\$100.93
10026	12	40	\$1.22	\$48.80	\$9.77	\$9.77	\$2.96	\$29.62	\$100.93
352	14	3.33	\$0.89	\$2.96	\$9.77	\$9.77	\$2.96	\$29.62	\$55.09
4067	14	6.61	\$0.89	\$5.88	\$9.77	\$9.77	\$2.96	\$29.62	\$58.01
3542	14	6.67	\$0.89	\$5.94	\$9.77	\$9.77	\$2.96	\$29.62	\$58.07
3541	14	13.3	\$0.89	\$11.86	\$9.77	\$9.77	\$2.96	\$29.62	\$63.99
4015	14	22	\$0.89	\$19.58	\$9.77	\$9.77	\$2.96	\$29.62	\$71.71
342	14	22	\$0.89	\$19.58	\$9.77	\$9.77	\$2.96	\$29.62	\$71.71
10006	14	30	\$0.89	\$26.70	\$9.77	\$9.77	\$2.96	\$29.62	\$78.83
3731	14	30	\$0.89	\$26.70	\$9.77	\$9.77	\$2.96	\$29.62	\$78.83
10018	14	40	\$0.89	\$35.60	\$9.77	\$9.77	\$2.96	\$29.62	\$87.73
3537	14	40	\$0.89	\$35.60	\$9.77	\$9.77	\$2.96	\$29.62	\$87.73
343	14	40	\$0.89	\$35.60	\$9.77	\$9.77	\$2.96	\$29.62	\$87.73
4027	14	40	\$0.89	\$35.60	\$9.77	\$9.77	\$2.96	\$29.62	\$87.73
4027	14	40	\$0.89	\$35.60	\$9.77	\$9.77	\$2.96	\$29.62	\$87.73
3527	16	8.67	\$0.74	\$6.42	\$9.77	\$7.41	\$2.96	\$29.62	\$56.18
689	16	9	\$0.74	\$6.66	\$9.77	\$7.41	\$2.96	\$29.62	\$56.42
3790	16	9.5	\$0.74	\$7.03	\$9.77	\$7.41	\$2.96	\$29.62	\$56.79
342	16	10	\$0.74	\$7.40	\$9.77	\$7.41	\$2.96	\$29.62	\$57.16
4081	16	20	\$0.74	\$14.80	\$9.77	\$7.41	\$2.96	\$29.62	\$64.56

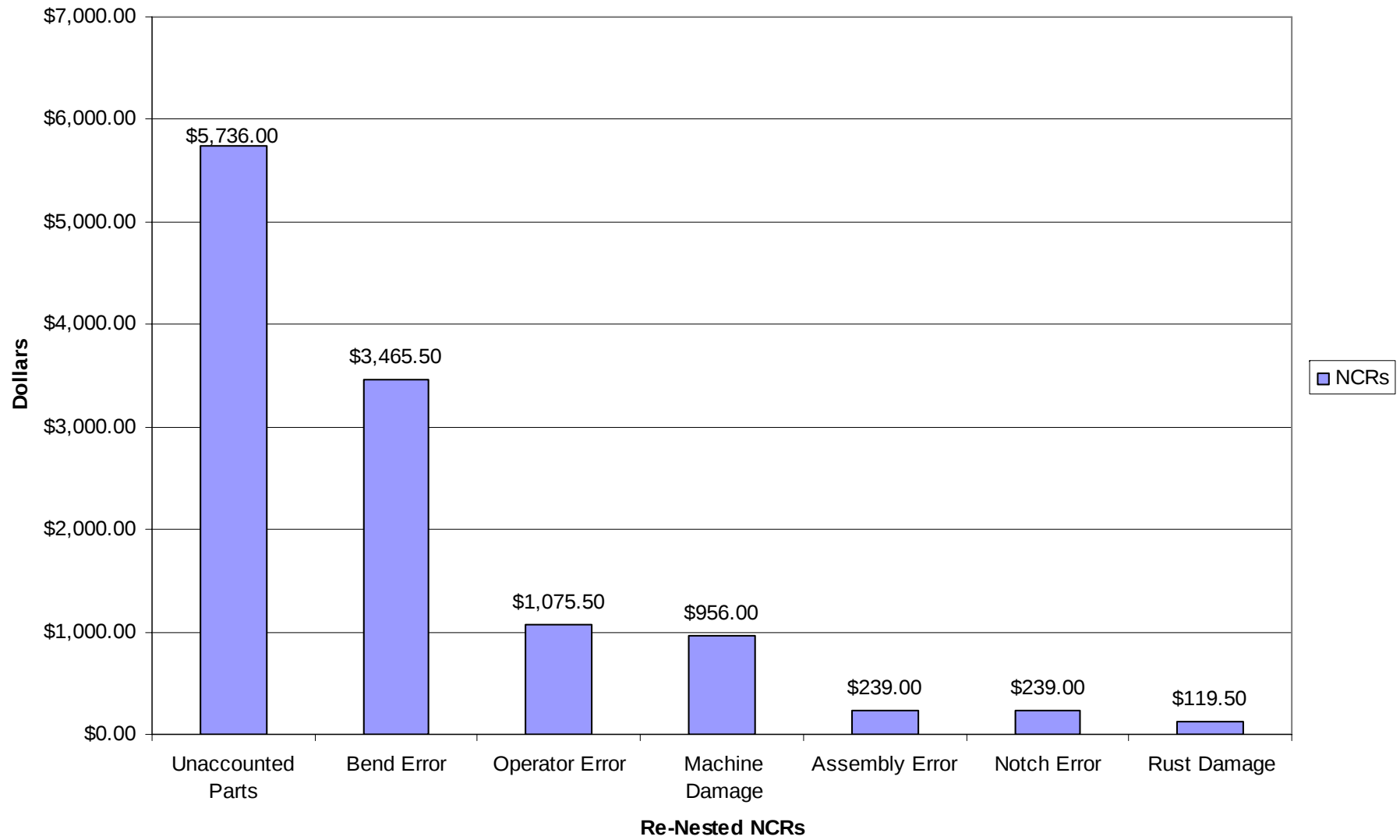
NCR Cost From Jan. thru Feb 2000

<u>NCR #</u>	<u>GA</u>	<u>SQ. FT</u>	<u>\$/SQ.FT.</u>	<u>GALV. \$</u>	<u>\$/NEST</u>	<u>MACH TIME</u>	<u>BRAKE TIME</u>	<u>Lost Time</u>	<u>Re-Run</u>
4035	16	21.3	\$0.74	\$15.73	\$9.77	\$7.41	\$2.96	\$29.62	\$65.49
10006	16	24	\$0.74	\$17.76	\$9.77	\$7.41	\$2.96	\$29.62	\$67.52
3973	16	24	\$0.74	\$17.76	\$9.77	\$7.41	\$2.96	\$29.62	\$67.52
4034	16	24	\$0.74	\$17.76	\$9.77	\$7.41	\$2.96	\$29.62	\$67.52
4077	16	30	\$0.74	\$22.20	\$9.77	\$7.41	\$2.96	\$29.62	\$71.96
10021	16	32	\$0.74	\$23.68	\$9.77	\$7.41	\$2.96	\$29.62	\$73.44
10025	16	32	\$0.74	\$23.68	\$9.77	\$7.41	\$2.96	\$29.62	\$73.44
10006	16	32	\$0.74	\$23.68	\$9.77	\$7.41	\$2.96	\$29.62	\$73.44
346	16	32	\$0.74	\$23.68	\$9.77	\$7.41	\$2.96	\$29.62	\$73.44
3486	16	32	\$0.74	\$23.68	\$9.77	\$7.41	\$2.96	\$29.62	\$73.44
3486	16	32	\$0.74	\$23.68	\$9.77	\$7.41	\$2.96	\$29.62	\$73.44
4061	16	35.3	\$0.74	\$26.14	\$9.77	\$7.41	\$2.96	\$29.62	\$75.91
10021	16	40	\$0.74	\$29.60	\$9.77	\$7.41	\$2.96	\$29.62	\$79.36
10021	16	40	\$0.74	\$29.60	\$9.77	\$7.41	\$2.96	\$29.62	\$79.36
10006	16	40	\$0.74	\$29.60	\$9.77	\$7.41	\$2.96	\$29.62	\$79.36
4060	16	40	\$0.74	\$29.60	\$9.77	\$7.41	\$2.96	\$29.62	\$79.36
4067	16	48	\$0.74	\$35.52	\$9.77	\$7.41	\$2.96	\$29.62	\$85.28
4077	16	52	\$0.92	\$47.84	\$9.77	\$7.41	\$2.96	\$29.62	\$97.60
353	18	12.5	\$0.74	\$9.25	\$9.77	\$7.41	\$2.96	\$29.62	\$59.01
3542	18	20	\$0.74	\$14.80	\$9.77	\$7.41	\$2.96	\$29.62	\$64.56

NCR Cost From Jan. thru Feb 2000

<u>NCR #</u>	<u>GA</u>	<u>SQ. FT</u>	<u>\$/SQ.FT.</u>	<u>GALV. \$</u>	<u>\$/NEST</u>	<u>MACH TIME</u>	<u>BRAKE TIME</u>	<u>Lost Time</u>	<u>Re-Run</u>
4074	18	20	\$0.74	\$14.80	\$9.77	\$7.41	\$2.96	\$29.62	\$64.56
3764	18	20	\$0.74	\$14.80	\$9.77	\$7.41	\$2.96	\$29.62	\$64.56
353	18	40	\$0.74	\$29.60	\$9.77	\$7.41	\$2.96	\$29.62	\$79.36
4070	18	40	\$0.74	\$29.60	\$9.77	\$7.41	\$2.96	\$29.62	\$79.36
4070	18	40	\$0.74	\$29.60	\$9.77	\$7.41	\$2.96	\$29.62	\$79.36
4067	18	40	\$0.74	\$29.60	\$9.77	\$7.41	\$2.96	\$29.62	\$79.36
100114C	18	48	\$0.74	\$35.52	\$9.77	\$7.41	\$2.96	\$29.62	\$85.28
4074	20	20	\$0.74	\$14.80	\$9.77	\$7.41	\$2.96	\$29.62	\$64.56
3796	20	23.3	\$0.74	\$17.26	\$9.77	\$7.41	\$2.96	\$29.62	\$67.03
10025	20	32	\$0.74	\$23.68	\$9.77	\$7.41	\$2.96	\$29.62	\$73.44
1185	20	40	\$0.74	\$29.60	\$9.77	\$7.41	\$2.96	\$29.62	\$79.36
4067	20	40	\$0.74	\$29.60	\$9.77	\$7.41	\$2.96	\$29.62	\$79.36
3486	24	13.3	\$0.74	\$9.86	\$9.77	\$7.41	\$2.96	\$29.62	\$59.63
				\$1,629.12	\$625.57	\$559.52	\$189.57	\$1,895.68	\$4,899.47
Total cost of re-nested parts:				<u>\$4,899.47</u>					
Average Cost of NCR:				\$119.50					

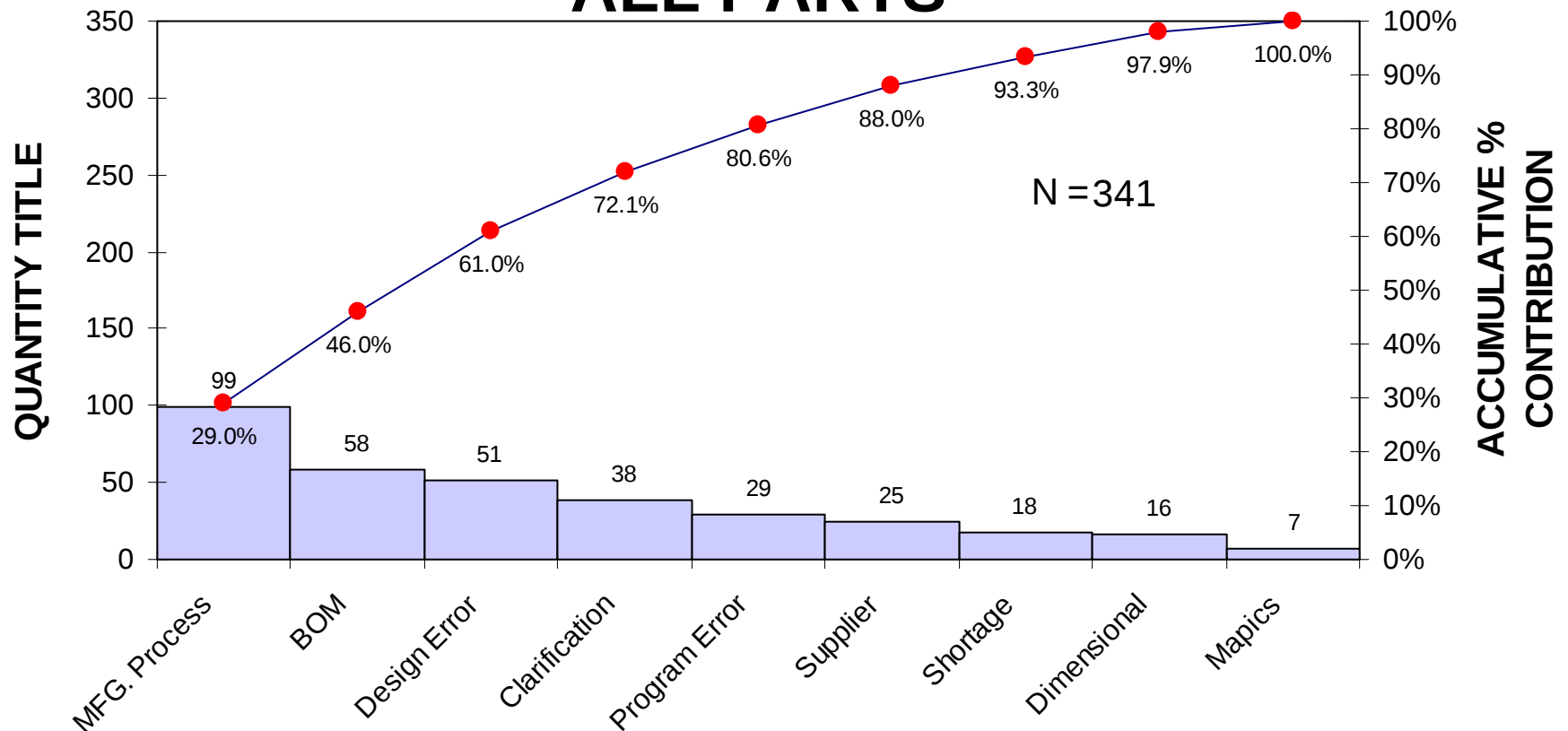
Cost of NCRs From Jan thru Feb 2000



IMPROVEMENT STORY - STEP 1

IDENTIFY THE PROBLEM

RENESTED NCRs - HATTIESBURG, ALL PARTS



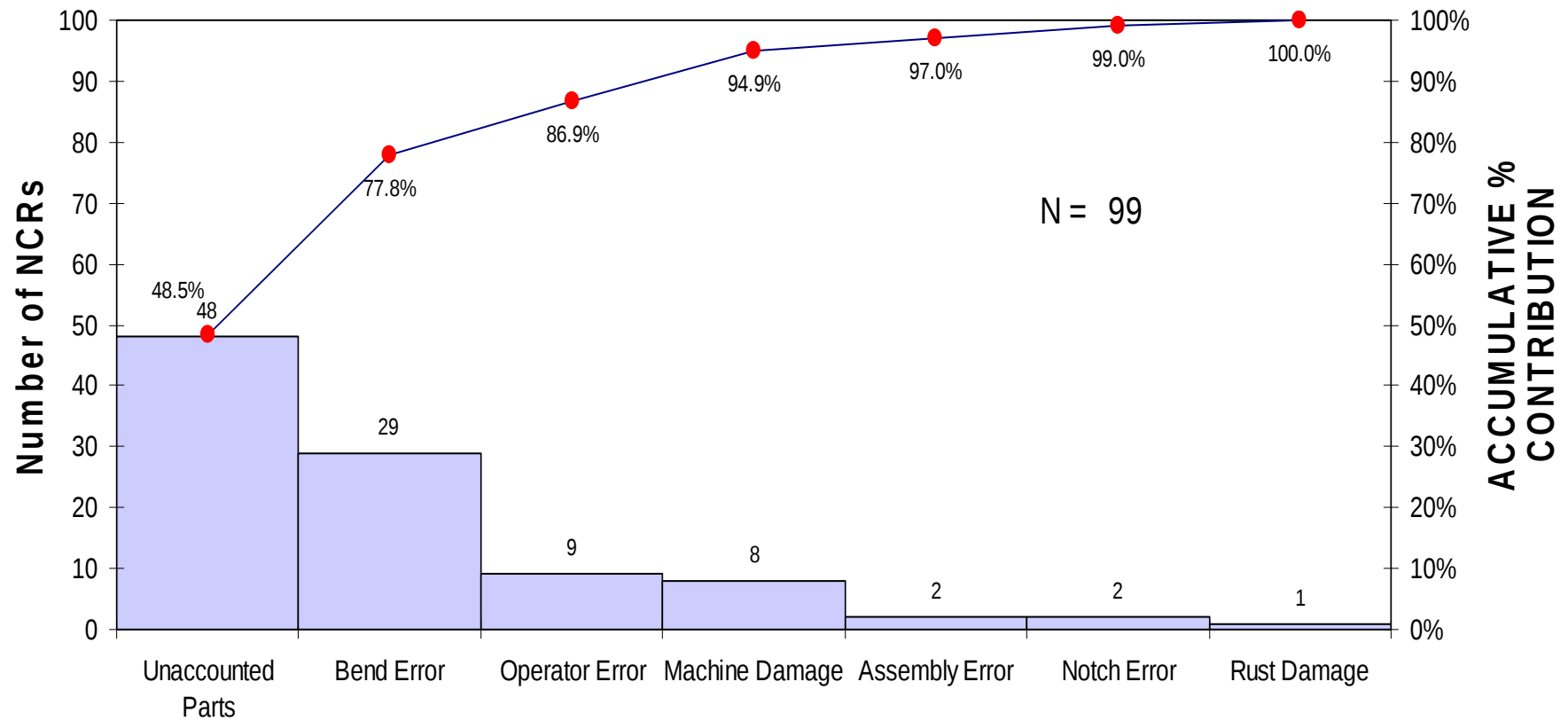
Name: John Ard

Date: 3/03/00

Source: NCRs From Jan '00 thru Feb' 00

CATEGORY MEASURED TITLE

MANUFACTURING PROCESS PARETO



RE-NESTED NCRs

Name: John Ard

Date: 3/03/00

Source: NCRs From Jan '00 thru Feb '00

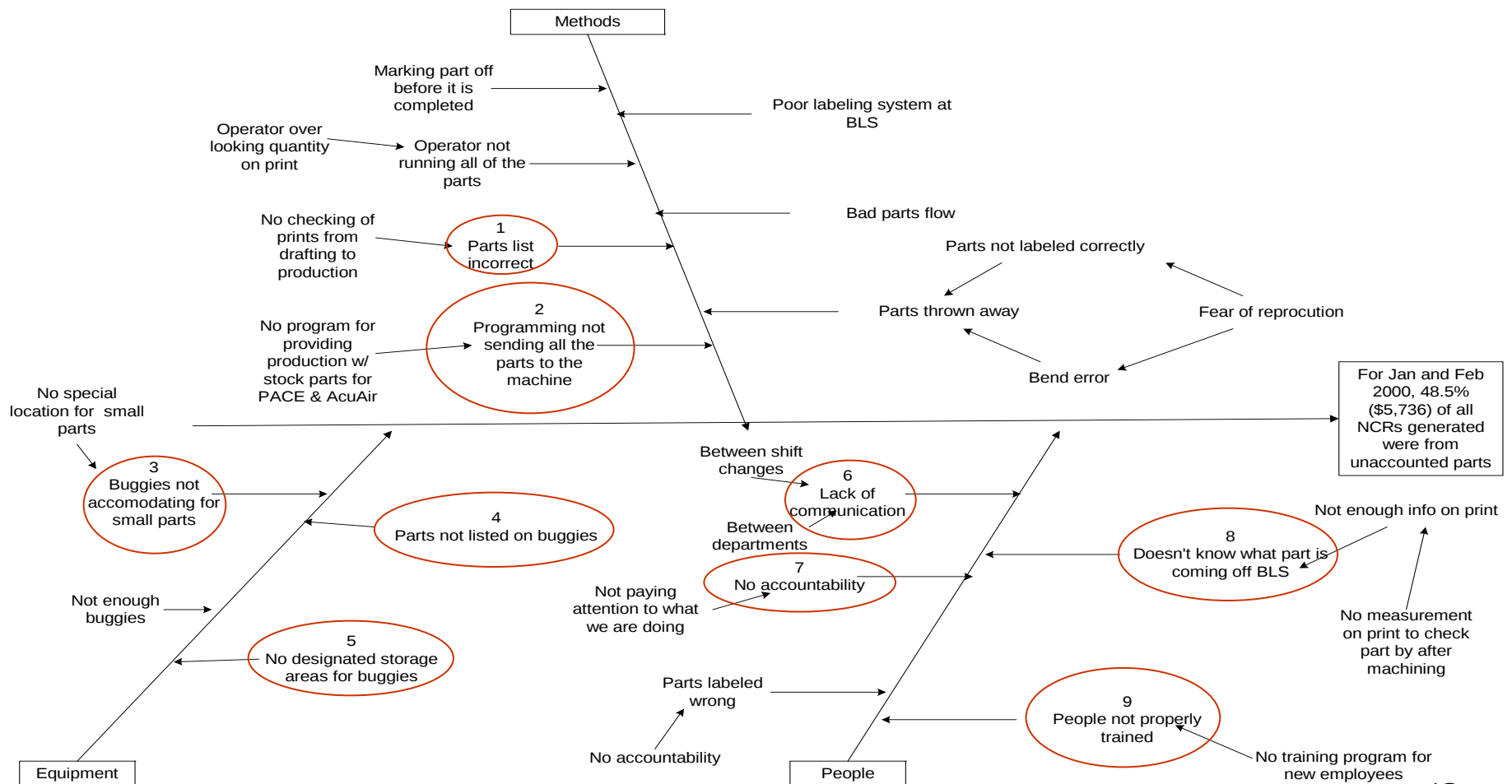
PROBLEM STATEMENT

For January and February 2000, 48.5% (\$5,736) of all NCRs generated were from unaccounted parts.

IMPROVEMENT STORY - STEP 2

ANALYZE CAUSES

Cause and Effect Diagram- Hattiesburg Unplanned Parts



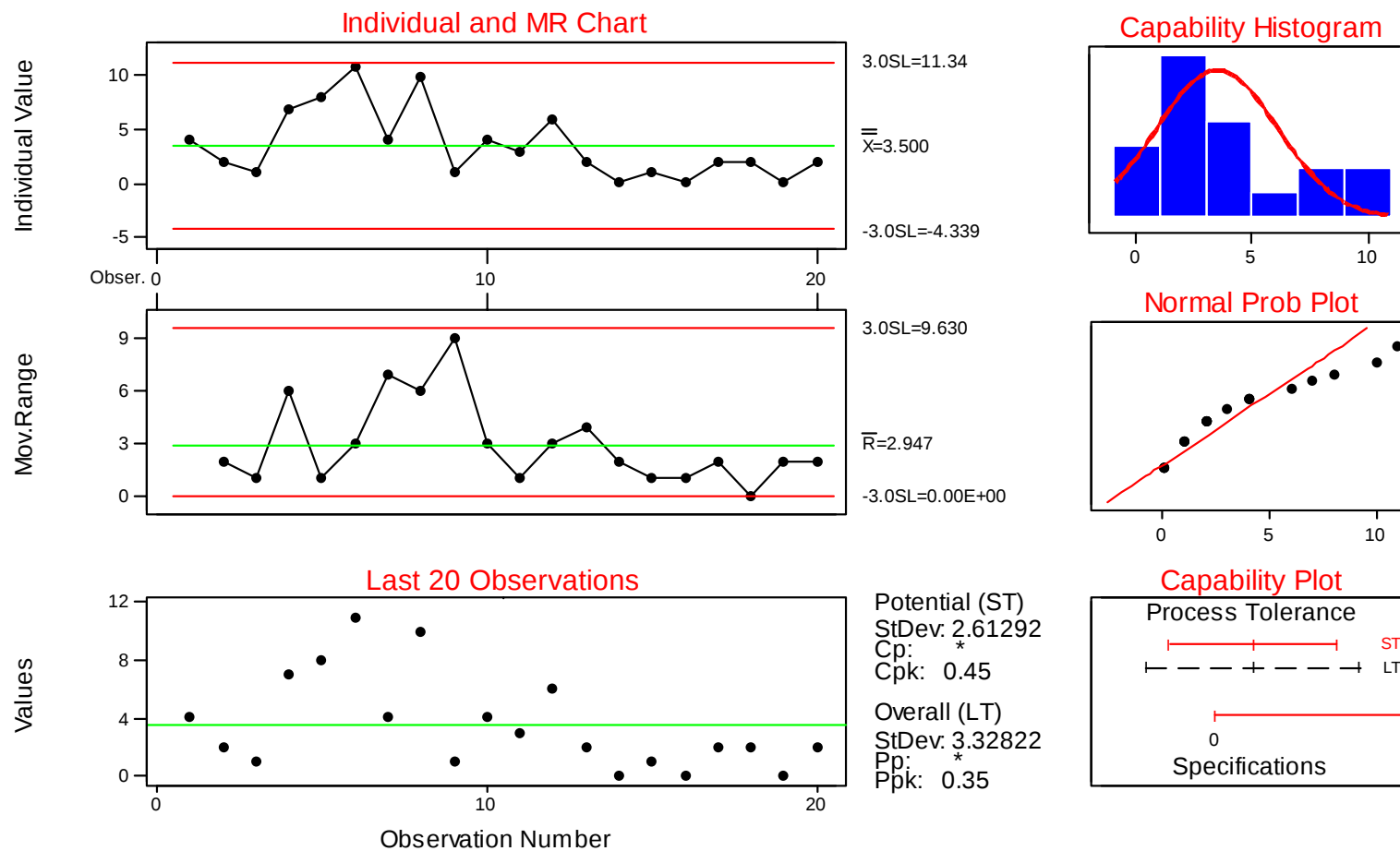
IMPROVEMENT STORY - STEP 3

GENERATE AND SELECT COUNTERMEASURES

Number	What	When	Action Plan	Status
1	Qualified print checker		Job Posted	In Process
2	Programming to run stock parts for AcuAir and PACE		Drafting/Programming	In Process
3	Redesign parts buggies to accommodate small parts		One buggy completed as a pilot.	In Process
4	Carbon copy of parts to be attached to buggy		Bend machines now using form. Plastic bags have been ordered for the	COMPLETE
5	Implement storage area and tracking method for parts buggies		Mark area off for buggy storage. Dry erase board to log buggy location in storage area	COMPLETE
6	Hang dry erase board in insulation area. This allows 1st shift to correspond any problems that have occurred to 2nd shift at shift change.		Hang dry erase board	COMPLETE
7	Improve process for accountability			
8	Have PEGA place identification marks on part before the sheet is sent to BLS.			
9	Establish adequate training program for new employees			

IMPROVEMENT STORY - STEP 4 IMPLEMENT AND EVALUATE RESULTS

Process Capability for Number of NCRs



IMPROVEMENT STORY - STEP 5 STANDARDIZE AND REPLICATE IMPROVEMENTS

STEP CHECKLIST [Remove when step is completed]

The proven countermeasures / standards developed become a part of the daily work
A plan or control system [what, who, frequency] is in place to monitor ongoing performance
Opportunities to replicate the lessons learned and countermeasures have been factored into the action plan
Any remaining gaps in performance have been addressed or planned to be addressed
Lessons learned about the success and failure of the team / individual have been evaluated and/or acted upon
Revise flowchart and procedures
Communicate changes

Helpful Tools & Techniques [Remove when step is completed]

Flowchart
Policies / Procedures / Standards
Control System
Brainstorming
Pareto Analysis
Radar Chart

[illegible]