Q.C. Theme - No Idea

BACKGROUND:

TMMK currently uses 16 bolts per vehicle in line 1 and line 2 to install the door.
These bolts are only used to hold the door until removal on trim 1 line in assembly.
They have internal value only and do not go to our customer's.

Total usage per year = 8,000,000 bolts

OLD METHOD:

Process and system was controlled by assembly P.E.
Cleaning area was set-up in paint 1.

BODYWELD TEAM MEMBER INSTALLS DOOR BOLTS → DOOR TRAVELS THRU PAINT SHOP → DOOR IS REMOVED ON TRIM 1 IN ASSEMBLY. → BOLTS ARE THROWN INTO A BARRELL. → MACLEELLAN PICKS UP DOOR BOLTS RANDOMLY AND TAKES TO PAINT 1. → BOLTS ARE CLEANED WITH WHEELABRATOR X → BOLTS ARE RETURNED TO BODYWELD IN BOXES.

KPI Evaluation:		
SAFETY-		○
QUALITY		○
PRODUCTIVITY		○
COST		△
ENVIRONMENT		△

OLD PROCESS COST: $116,307.00 / Yr.

Cost includes:
1) Zinc for wheelabrator
2) Bolt purge
3) Labor for Mc Clellan

△

Change Point #1 - Method of cleaning was changed in paint shop.

*** Removal of Wheelobrator improves dirt in Paint Shop**

CHANGED METHOD:

Process and system still controlled by assembly P.E.
Cleaning area still in paint 1.

BODYWELD TEAM MEMBER INSTALLS DOOR BOLTS → DOOR TRAVELS THRU PAINT SHOP → DOOR IS REMOVED ON TRIM 1 IN ASSEMBLY. → BOLTS ARE THROWN INTO A BARRELL. → MACLEELLAN PICKS UP DOOR BOLTS RANDOMLY AND TAKES TO PAINT 1. → BOLTS ARE CLEANED WITH JET BLASTER X → BOLTS ARE RETURNED TO BODYWELD IN BOXES.

KPI Evaluation:

SAFETY	X →	10- Injuries or ESI's
QUALITY	X →	50-60 Stripped bolts daily
PRODUCTIVITY	X →	Downtime Avg.5 mins shift
COST	X →	Scrap doors and bolts
ENVIRONMENT	X →	Hazardous chemical

Changed method cost: $177,464.00 / Yr.

Cost includes:
1) Scrap bolts
2) Bolt purge
3) Labor for McClellan

X

EVALUATION= X → REQUIRES IMPROVEMENT

QUALITY CIRCLE - "NO IDEA" - TAKES THE CHALLENGE

*** INVESTIGATION / GENSHI GENBUTSU** * Reviewed Past History , Current Situation and Future Potential improvement

Problems identified

1- Wheelabrator was removed
2. Damage coming from water blasting
3- No management system for bolts
4- No standards in place
5- No FIFO system

Potential countermeasure:

GM	AGM	MGR BW.	MGR ASSY.	AM BW.	AM ASSY.

Trial #1- New Bolts only - NAMC Standard Operation
Welding production group starts using 100% New Bolts
All KPI 's Improved except Cost.

COST: $480,000.00

X

Trial #2- Recycle every 6 weeks (NO cleaning)

BODYWELD TEAM MEMBER INSTALLS DOOR BOLTS → DOOR TRAVELS THRU PAINT SHOP → DOOR IS REMOVED ON TRIM 1 IN ASSEMBLY. → BOLTS ARE THROWN INTO A BARRELL. → MACLEELLAN PICKS UP DOOR BOLTS AND BRINGS TO BODYWELD. → BOLTS ARE SCRAPPED EVERY SIX WEEKS X

CURRENTLY WE ARE NOT CLEANING ONLY SCRAPPING BOLTS **200,000** BOLTS EVERY 6-WEEKS
WE WILL SCRAP AROUND **1,800,000** BOLTS A YEAR.

*** Requires Management / FIFO**
*** Includes transportation cost**

Results		
SAFETY	X →	STILL HAVING ERGONOMIC ISSUES
QUALITY	△ →	DEFECTED BOLTS MIXED IN
PRODUCTIVITY	△ →	DOWNTIME AVG. 2MINS/SHIFT
COST	X →	SCRAP BOLT COST
ENVIRONMENT	△ →	SCRAPPING THE BOLTS

COST: $119,520.00 / Yr.

△

Trial # 3- Recycle with adding cleaning

BODYWELD TEAM MEMBER INSTALLS DOOR BOLTS → DOOR TRAVELS THRU PAINT SHOP → DOOR IS REMOVED ON TRIM 1 IN ASSEMBLY. → BOLTS ARE THROWN INTO A BARRELL. → MCLELLAN PICKS UP DOOR BOLTS AND BRINGS TO BODYWELD

Change point → ON A SET SCHEDULE MCLELLAN PICKS UP DOOR BOLTS AND CLEANS USING WHEELABRATOR → MCLELLAN RETURNS DOOR BOLTS TO BODYWELD

Results		
EVALUATION KPI'S		
SAFETY-		○
QUALITY		○
PRODUCTIVITY		○
COST		○
ENVIRONMENT		○

IMPROVES ALL KPI'S

COST: $25,000.00 FIRST YEAR

FUTURE COST: $ 26,559.00 YEARLY COST

* Requires management/FIFO
* Includes transportation and labor
* Has a set cleaning schedule
* Will have no bolt purging

Difference between old method and this trial is.
* Set cleaning schedule which will reduce Zinc.
* Not scrapping the bolts reusing them.

○

Analysis

OPTIONS		SAFETY	QUALITY	PROD.	COST	ENVIRON.		TOTAL YEARLY COST
#1	Purchase new bolts	○	○	○	X	X		$480,000.00
#2	Scrap bolts after use	○	△	△	X	X		$119,520.00
#3	Clean bolts 8 times yr.	○	○	○	○	○		$26,559.00

Based on our Q.C. activity we have following recommendation:

Ó			Who:		Status:
Present to Bodyweld management			Q.C.		Ó
Present to P.C.			Q.C./Manag.		Ó
Present to Dept.Heads			Management		Ó
Plant approval			Dept Heads		Ó
Add to kaizen database			Engineering		Õ
NAMC Yokoten			Engineering		Ó

Cost avoidance/ Reduction at TMMK can be realized at all NAMC's in N.America and abroad (based on volume and environmental impact)

Implementation:

WHAT:			WHO:		WHEN:			STATUS:
ESTABLISH BUDGET RINGI			P.E.		17/05/2010			Ó
SET UP WHEELABRATOR COLUMN Z-20			PROJ/MAINT.		24/05/2010			Ó
WRITE STD WORK			Q.C.		24/05/2010			Ó
FABRICATE CARTS /DRUMS			PROJ 1&2		07/06/2010			Ó
ORDER BOLTS			P.C.		19/07/2010			Ó
BEGIN NEW BOLT PROCESS			B.W.		19/07/2010			Ó