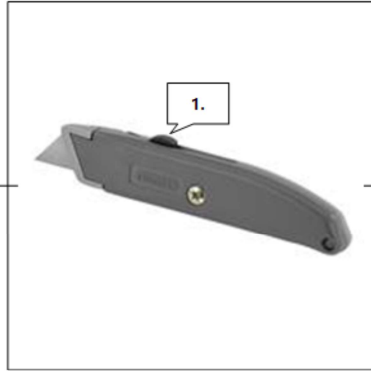**ACME Manufacturing Inc.**

KNIFE CUTTING ACTIVITY WORK INSTRUCTIONS
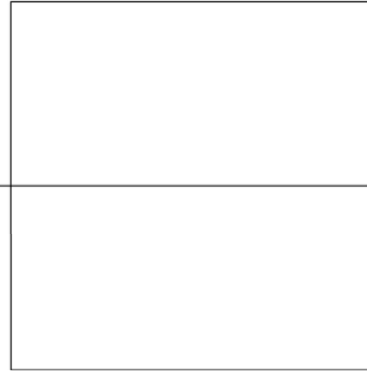
DEPT: O01   **ACTIVITY:** ROLL CUTTING   **DATE:** 02/08/07

PHOTOGRAPHIC DISCRIPTION OF KNIFE	VISUAL AID
1.	

▲! SAFETY: ONLY PERSONS TRAINED HOW TO DO THESE TASKS ARE TO CARRY OUT THESE TASKS !▲

ACTIVITY	JOB FUNCTION	KNIFE TYPE	PPE TO USE	FREQUENCY
Cutting Long bags for bag house	OP, PT, SU	Self retracting utility hook knife	Cut resistance gloves Cutting sleeve	Daily

CUTTING ACTIVITY WORK INSTRUCTIONS

- Use the proper cutting knife for this activity as shown in the photographic description above
- Put on protective sleeve and glove on the **opposite** hand and forearm holding the knife
- Push down on the blade release button on the knife and line up the blade to the edge of the material
- Start the cut and release the blade release button 1. (this is done so the blade will automatically retract into the knife body at the end of the material being cut)

Job Function	Knife Type Key
MH – Material Handler	Reg – Regular Utility Knife Straight Blade
OP – Operator	Safety – Self-retracting Utility Knife Hooked Blade
PT – Process Technician	HD – Heavy Duty Fixed Blade Knife
SU – Setup Technician	
MX – Maintenance Technician	
IP – Inspector/Packer	

At one company that I work for we had so many people getting injured by cutting themselves with knives we had to standardize the knives that were permitted to be used in the plant. All 'authorized' associates were trained to use them properly and licensed. This is the standard document that I designed.

Sounds crazy, but this strict standards on unsafe conditions and unsafe behaviors reduced cut injuries by 80% percent in loss time accidents for the cuts injury category.

STANDARD WORK JOB BREAKDOWN PROCEDURE
(METAL DETECTOR ALARMS & REJECT METHODS & DOCUMENTATION)

MACHINE: LINES 4 THROUGH 7 & 11	**PROCESS:** DETECTION AND REACTION PLANS IN THE EVENT OF THE PHYSICAL HAZARDS OF METAL CONTAMINATION OF PRODUCT
CHANGEOVER TIME: N/A	**FREQUENCY:** EVERY OCCURRENCE

! ▲ ONLY PERSONS TRAINED HOW TO DO THESE TASKS ARE TO CARRY OUT TASKS ▲ !

PPEs: Y FOLLOW ALL APPLICABLE JSAs **Y** FOLLOW ALL 'LOTO' PROCEDURES

PURPOSE: THE PURPOSE OF THIS STANDARD WORK INSTRUCTION IS TO DEFINE THE PROCESSES USED TO VALIDATE METAL DETECTOR ALARMS, THE REACTION PLANS TO METAL CONTAMINATION AND THE DOCUMENTATION OF METAL EVENTS INCLUDING FALSE AND UNVERIFIED ALARMS. .

Y = SAFETY POINT ◆ = QUALITY POINT 🎧✏ = PPEs REQUIRED ✗ = TOOLS REQUIRED ① = CRITICAL NOTE

№	REACTION PLAN FOR METAL DETECTION EVENTS
1	IF THE METAL DETECTOR SHUTS DOWN THE TRIM PRESS FOR METAL, THE OPERATOR IS TO CUT OUT THE SECTION OF SHEET AND NOTE THE NUMBER OF REJECTS SHOWING ON THE COUNTER ON THE STORYBOARD. EACH METAL EVENT NEEDS TO BE ADDRESSED AND EXPLAINED. (E.G. IF AT THE BEGINNING OF THE INVESTIGATION THE COUNT IS 10 AND AT THE END OF THE INVESTIGATION THE COUNT 17, THIS COUNT OF 7 EVENTS MUST BE RECORDED ON THE STORYBOARD).
2	IF THE REJECTS COUNTS ARE NOT VISIBLE ON THE DISPLAY, REFER TO THE PHOTOGRAPHIC DESCRIPTION BELOW TO ACCESS THEM.

IF THE REJECT COUNT IS NOT DISPLAYED, PRESS THIS BUTTON UNTIL IT APPEARS

① WHEN THE METAL DETECTOR STOPS THE LINE, THE SHEET SHOULD BE CUT RIGHT OUT OF THE DETECTOR TO GUIDE GOING INTO THE DIE SET WHERE THE PARTS ARE CUT OUT.

METAL DETECTOR EXIT

DIE SET

DO NOT MIX ROWS

① PULL THIS SHEET BACK THROUGH THE METAL DETECTOR TO SEE IF IT DETECTS METAL AGAIN.

3 A	IF THE METAL IS DETECTED, VISUALLY LOCATE THE METAL PARTICLE AND ANALYZE POSSIBLE SOURCE
3 B	IF THE METAL CAN NOT BE LOCATED, THE LINE TECHNICIAN IS TO CUT THE SHEET INTO SECTIONS AS SUCH THAT IT WILL FIT THE OPENING OF THE OFF-LINE METAL DETECTOR IN OMV (SEE PHOTOGRAPHIC DESCRIPTION BELOW)
4	RUN THE CUT SECTIONS THROUGH THE OFF-LINE METAL DETECTOR IN OMV AND/OR INSPECT THE SHEET OVER A LIGHT TABLE FOR MAXWELL CHASE PARTS THAT CAN NOT BE EASILY MODIFIED TO FIT THROUGH THE OFF-LINE METAL DETECTOR OPENING IN OMV.

This is a document I made with the help a the quality department to standardize metal detection events.
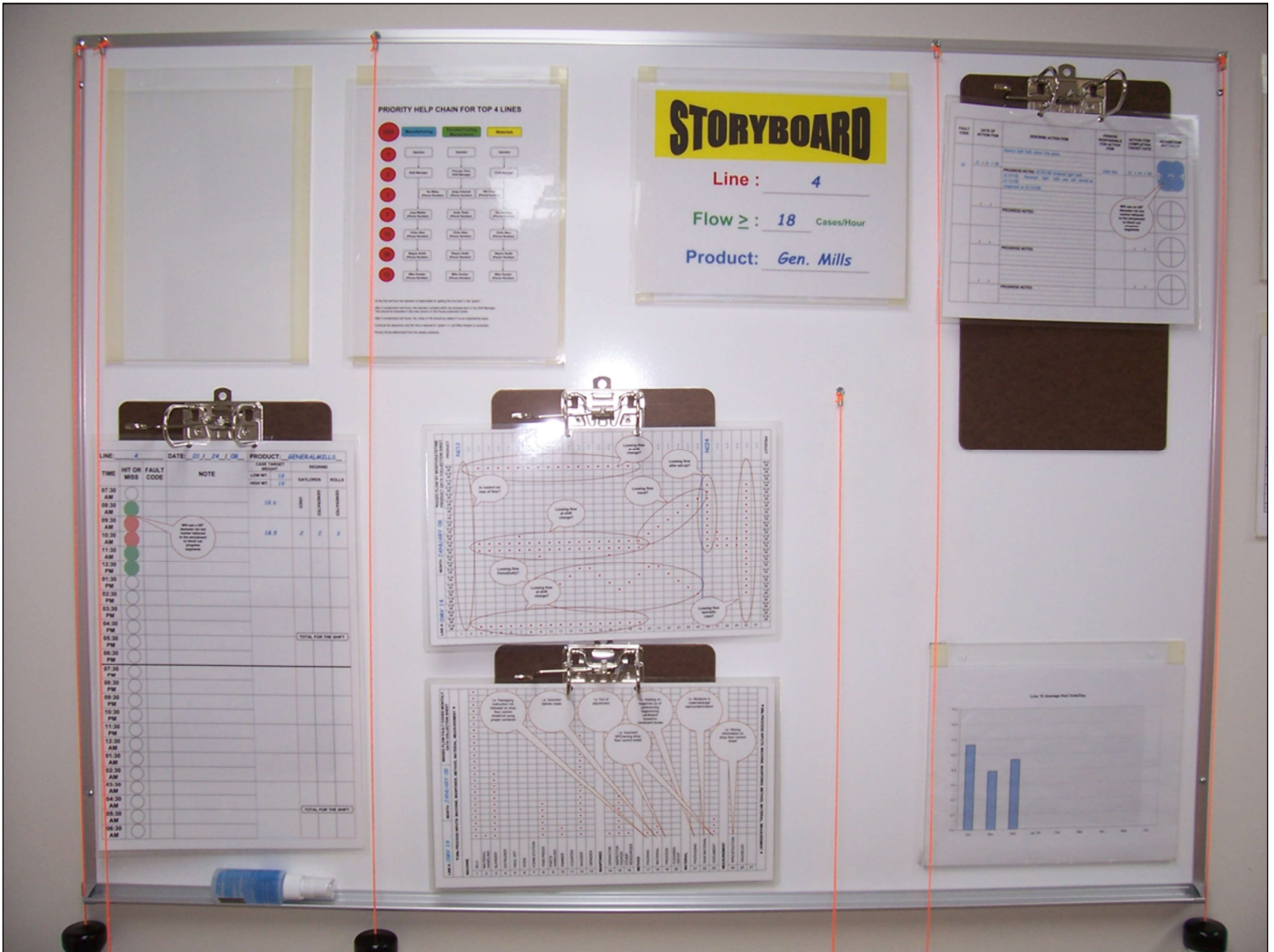
This is a storyboard and the next 9 slides are standardized data collection and reports documents that I created that were used on them…

STORYBOARD

Line :	4	
Flow ≥ :	18	Cases/Hour
Product:	Gen. Mills	

Storyboard daily production numbers and product type.

TIME	HIT OR MISS (GREEN OR RED DOT)	FAULT CODE						

LINE: _____ DATE: ___02___ / ___14___ / ___08___ PRODUCT: _____ NC 24 _____

TIME	HIT OR MISS (GREEN OR RED DOT)	FAULT CODE	L/T NAME 1/2 SHIFT _____ L/T NAME 3/4 SHIFT _____ ⬇ NOTES ⬇	CASE WEIGHT		REGRIND		
				LOW WT.	25 LBS	GAYLORDS		ROLLS
				HIGH WT.	35 LBS	USED	MADE	MADE
07:30 AM	🔴	12	Proximity senor bad on servo motor		33.5 LBS	2	1	1
08:30 AM	🔴							
09:30 AM	🟢		Will use an 5/8" diameter ink dot marker tethered to the storyboard to block out progress segments					
10:30 AM	🟢							
11:30 AM	🟢							
12:30 PM	⚪							
01:30 PM	⚪							
02:30 PM	⚪							
03:30 PM	⚪							
04:30 PM	⚪							
05:30 PM	⚪					TOTAL FOR SHIFT		
06:30 PM	⚪							
07:30 PM	⚪							
08:30 PM	⚪							
09:30 PM	⚪							
10:30 PM	⚪							
11:30 PM	⚪							
12:30 AM								
01:30 AM								

Storyboard product hour by hour attainment data collection sheet.

#	5Ms ➡	➡ GUIDE TO CONDITIONS IN 5M FACTORS THAT MAY CONTRIBUTE TO THE PROBLEM ➡
MACHINE		
1	SILO	SLIDE GATE CLOSED - LEAK IN TO SILO - UNABLE TO PULL MATERIAL - SLUGGING OF MATERIAL - ANGEL HAIR -
2	MATERIAL HANDLING	VACUUM PUMP DEFECTIVE - INADEQUATE FLOW OF MATERIAL TO THE BLENDER SYSTEM -
3	BLENDER	LACK OF MATERIAL - RAN OUT OF MATERIAL -
4	EXTRUDER	MELT BLOCK - OVER/UNDER HEATING - VENT NOT WORKING - BLOCKED SCREEN PACK - CARBON CONTAMINATION - LEAKY DECKLES -
5	HAUL OFF	BUSTED AIR LINE - OUT OF CONTROL CHROME ROLLS TEMPERATURE - DIRTY CHROME ROLLS - MALFUNCTIONING AIR CYLINDER - BEARINGS BAD - DRIVE BELT BROKEN
6	OVEN	HEATER ZONES NOT CONTROLLING - BURNT HEATER ELEMENTS - TRACK MISALIGNMENT - FIRE -
7	FORM STATION	PIN CHAIN - RAILS - DRIVE MOTORS - TOGGLES - MAC VALVE S - VACUUM PUMP BAD - MOLD COOLING - PLUG CYLINDER - CUTTER CYLINDER - CAM/LINKAGES - GEARBOX - LUBRICATION - LIQUID LEAKS
8	TOOLING	PLUG DEFECTIVE - CAVITIES - AIR CYLINDERS - RAM PRESSES/CLAMPING - BLADDER NOT WORKING - LEAKS - DIE PLATE & PUNCHES DULL - MOLD ALIGNMENT - GUIDE SET -
9	VERTICAL TRIM PRESS	DRIVE SYSTEM - SLUG SUCKER CLOGGED - NIP WHEELS - IN FEED GUIDANCE -
10	TRIM PRESS	BURNT OUT DRIVE BELTS - DRIVE PROBLEMS - DRAG STRAPS - LUBRICATION - METAL DETECTOR FALSE ALARMS - TRUE METAL EVENT - MISS TRIM - CHOPPING
11	PARTS HANDLING	TRIM TO RIM - DSA/DCU - TRANSPORTER PLATE S - BELT CONVEYORS - STACKER - PACK TABLE - VACUUM PLATES -
12	RIMMER	SCREW PROBLEMS - CROWD ROLLERS - CAGE ROLLERS - HEATERS NOT CONTROLLING - WATER FLOW PROBLEMS - BELT CONVEYORS - DRIVE BELTS PROBLEMS - SILICONE SPRAYER -
13	COUNTER	COUNT EYE ADJUSTMENT - STRIPPER OUT OF ADJUSTMENT - CONVEYOR BELTS -
14	BAGGER	JAW HEATERS NOT CONTROLLING - BLADES - BAG FEED SYSTEM MALFUNCTION - TRANSFERRING BELT CONVEYOR - PADDLE WHEEL JAM S -
15	GRINDER	BELTS BURNT UP - DULL BLADES - MATERIAL JAMS - BLOWER MALFUNCTION -
MANPOWER		
16	LINE TECHNICIAN	KNOWLEDGE BASED FACTORS - SKILL BASED FACTORS - HUMAN SENSORY ERROR - PSYCHOLOGICAL ERRORS - PHYSIC LOGICAL FACTORS - NO COVERAGE/SHORT HANDED - SLIP/LAPSE IN TASK STEPS -
17	INSPECTOR PACKER	KNOWLEDGE BASED FACTORS - SKILL BASED FACTORS - HUMAN SENSORY ERROR - PSYCHOLOGICAL ERRORS - PHYSIOLOGICAL FACTORS - NO COVERAGE/SHORT HANDED - SLIP/LAPSE IN TASK STEPS -
18	OTHER RESOURCES	MAINTENANCE TECHNICIAN NOT AVAILABLE - PROCESS TECHNICIAN NOT AVAILABLE - LACK OF SUPPORT STAFF RESOURCES - MATERIAL HANDLER NOT AVAILABLE - SUPPORT STAFF UNABLE TO DIAGNOSE PROBLEM -
METHOD		
19	PACKING	PACKAGING INSTRUCTION NOT FOLLOWED ON SHOP FLOOR CONROL SHEET - NOT USING CORRECT CONTAINER -
20	MATERIAL	INCORRECT BLENDS MADE -
21	PROCESS	OUT OF ADJUSTMENT - WRONG PROCESS SET UP -
22	CLEANING HACCP	HAZARD ANALYSIS CRITICAL CONTROL POINT - CLEANING - SANITIZING -
MATERIAL		
24	RAW MATERIAL	MOISTURE IN MATERIAL - CHEMICAL CHARACTERISTICS OF MATERIAL WRONG - CONTAMINATION -
25	DOCUMENT	INCORRECT DOCUMENTATION FOR PRODUCT BEING PRODUCED -
MEASUREMENT		

Storyboard fault code aid sheet.

LINE #: **OMV 14**	MONTH: **JANUARY 08**	MISSED FLOW FAULT CODES MONTHLY DATA COLLECTION SHEET

➜ RED DOTS OF MISSED FLOW IN 5M FACTORS ➜

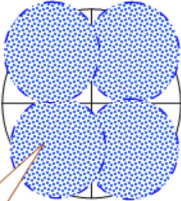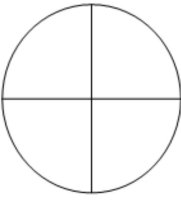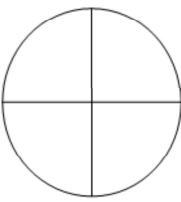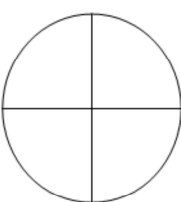| #	➜ 5Ms ➜	Red dots (count of missed flow)
MACHINE		
1	SILO	• •
2	MATERIAL HANDLING	•
3	BLENDER	• • • • • • • • • • • • • •
4	EXTRUDER	
5	HAUL OFF	
6	OVEN	
7	FORM STATION	
8	TOOLING	
9	VERTICAL TRIM PRESS	
10	TRIM PRESS	• • • • • • • • • • • • • •
11	PARTS HANDLING	
12	RIMMER	• •
13	COUNTER	
14	BAGGER	
15	GRINDER	
MANPOWER		
16	LINE TECHNICIAN	•
17	INSPECTOR PACKER	• • • • • • • • • • • •
18	OTHER RESOURCES	•
METHOD		
19	PACKING	•
20	MATERIAL	• •
21	PROCESS	
22	CLEANING HACCP	•
MATERIAL		
24	RAW MATERIAL	
25	DOCUMENT	• •
MEASUREMENT		

Storyboard fault code data collection sheet.
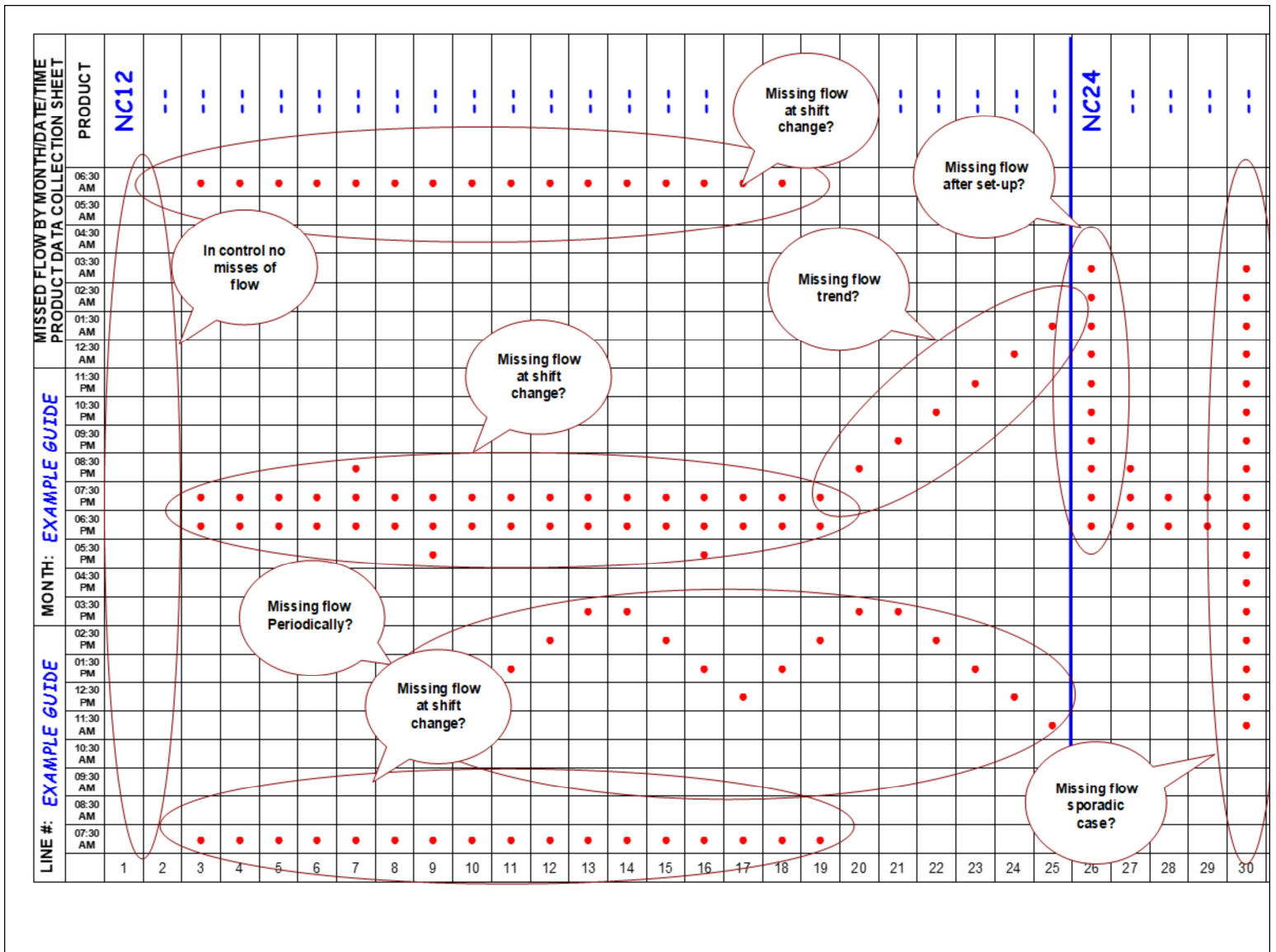
Storyboard hourly misses of production flow by production line, time, date and product type being run This document that I created allows us to breakdown our facts and data into discrete, discernable patterns of 'how' in elements of 'what' and periods of 'when' and 'how' often that characterize their occurrences.

HELP CHAIN

RED HOURS OF MISSED FLOW	MANUFACTURING	PROCESS/TOOLING MAINTENANCE	MATERIALS
1	OPERATOR	OPERATOR	OPERATOR
2		PROCESS TECH. ↔ MAINT. TECH.	
3	SHIFT MANAGER	PROCESS TECH. MAINT. TECH. SHIFT MANAGER	SHIFT MANAGER
24		SHIFT TEAM LEADER	
36	SHIFT MANAGER	SHIFT MANAGER	SHIFT MANAGER
48	MANUFACTURING MANAGER	MANUFACTURING MANAGER	MANUFACTURING MANAGER
72	PLANT MANAGER	PLANT MANAGER	PLANT MANAGER
96	PRESIDENT	PRESIDENT	PRESIDENT

At the first red hour the operator is responsible for getting the line back to flow (green dot)
After 2 consecutive red hours of missed flow the operator contacts either the process tech. or the maintenance or both if needed
This must be recorded in the note column on the case attainment sheet
After 5 consecutive red hours of missed flow should be called if it is an engineering issue
Continue the sequence until the line is restored back to flow (green dot) or until Mike Roeder is triggered in the help chain
* No calls are to be made between the hours of 10:00pm and 7:00am - regular help chain only!

Storyboard Help chain sheet.

FAULT CODE	DATE OF ACTION ITEM	DESCRIBE ACTION ITEM	PERSON RESPONSIBLE FOR ACTION ITEM	ACTION ITEM COMPLETION TARGET DATE	ACTION ITEM PROGRESS
30	01 / 01 / 08	Replace light bulb above trim press PROGRESS NOTES: 01/01/08 Ordered light bulb 01/07/08 Received light bulb and will install on 01/12/08 Completed on 01/12/08	John Doe	01 / 14 / 08	
	/ /	PROGRESS NOTES:			
	/ /	PROGRESS NOTES:		/ /	
	/ /	PROGRESS NOTES:		/ /	

Will use a 5/8" diameter ink dot marker tethered to the storyboard to block out progress segments

Storyboard action item register sheet.

AUTONOMOUS PRODUCTION GROUP MEETING AGENDA ACTION REGISTER REVIEW

LINE ....11........   TEAMS/SHIFTS   1 & 3

1. STORY BOARD REVIEW
2. AROUND THE TABLE
3. ACTION REGISTER REVIEW
4. RECOGNITION
5. PASS UP/PASS DOWN
6. ACTION REGISTER REVIEW
7. ANY OTHER BUSINESS/WRAP UP

LAST MEETING REVIEW DATE: ____/____/____
LAST MEETING REVIEW DATE: ____/____/____
LAST MEETING REVIEW DATE: ____/____/____
LAST MEETING REVIEW DATE: ____/____/____
LAST MEETING REVIEW DATE: ____/____/____
LAST MEETING REVIEW DATE: ____/____/____
LAST MEETING REVIEW DATE: ____/____/____

ACTION ITEM	PERSON/S RESPONSIBLE INITIALS	ACTION ITEM TARGET DATE	ACTION ITEM PROGRESS	COMMENTS
		___/___/	⊕	
		___/___/	⊕	
		___/___/	⊕	
		___/___/	⊕	
		___/___/	⊕	
		___/___/	⊕	
		___/___/	⊕	

Storyboard small group team meeting agenda and action register sheet. In lean you have meetings to decide on something, not meetings to discuss something to have another meeting about…

TOTAL MOTHLY HOURS OF MISSED FLOW DATA ENTRY TEAM 1 LINES 1 - 5

HOURS OF MISSED FLOW

5Ms		JAN	FEB	MAR	APL	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	MEASUREMENT	24	22	10	8	0	0	0	0	0	0	0	0
	MATERIAL	18	1	0	16	0	0	0	0	0	0	0	0
	METHOD	12	7	5	17	0	0	0	0	0	0	0	0
	MANPOWER	5	2	16	4	0	0	0	0	0	0	0	0
	MACHINE	280	250	170	100	0	0	0	0	0	0	0	0

MONTHS

Do not enter or delete any data in these cells. Data is entered automatically

TOTAL MONTHLY HOURS OF MISSED FLOW TEAM 1 LINES 1 - 5
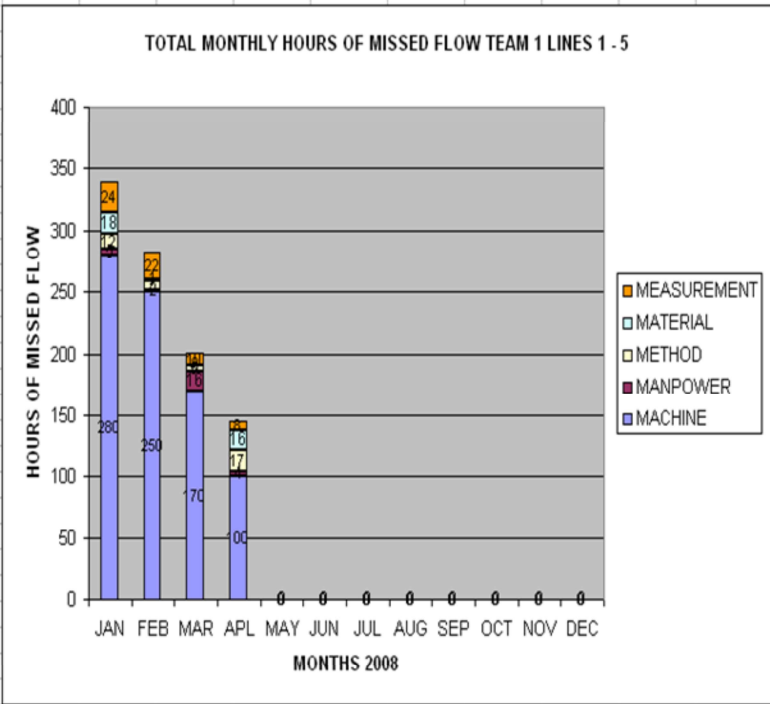
Select, print and post this chart on the 'CHECK' segment of Line Technician training dashboard

Storyboard long term effectiveness tracking data collection and reporting sheet.