

Visual Controls

SCENE 1.

CG: FBI warning

SCENE 2.

Tape 40, 01:00:00-01:00:12

ANI: SME logo

SCENE 3.

MUSIC UP AND UNDER

series opening title:  
Manufacturing Insights  
opening music

MANUFACTURING INSIGHTS, MANUFACTURING  
ENGINEERING MAGAZINE'S VIDEO SERIES FOR  
PROCESS IMPROVEMENT.

SCENE 4.

NARRATION (VO) :

program title: "Visual Controls"  
supered lower 1/3<sup>rd</sup> over BG under  
program footage in mortise

THIS PROGRAM EXAMINES HOW MANUFACTURING  
COMPANIES ARE USING VISUAL CONTROLS TO QUICKLY  
SPOT PRODUCTION PROBLEMS AND IMPROVE  
PRODUCTIVITY. WE WILL SEE VISUAL CONTROLS IN  
USE AT...

Mortise: 06:05:35 commcenter/sign  
09:28:00 compressor sign  
03:01:00 TAKT Sign

SCENE 5.

NARRATION (VO) :

TBD top 1/2, lower 1/3<sup>rd</sup> super:  
"BREED TECHNOLOGIES"

BREED TECHNOLOGIES, A GLOBAL SUPPLIER OF  
PASSENGER RESTRAINT SYSTEMS. THEY'VE MADE  
VISUAL CONTROLS A SCIENCE, PRACTICING IT ON  
THE PLANT FLOOR AND IN THEIR OFFICES.

Top 1/2: 092032 electronic sign  
092301 parts on brd. & pan  
101423 office

SCENE 6

Delphi Exterior in mortise, top  
1/2, lower 1/3<sup>rd</sup> super: "Delphi",  
then to two different product  
counts with super; ACTUAL/GOAL

071400 exterior

NARRATION (VO) :

**AT DELPHI AUTOMOTIVE, WHERE VISUAL CONTROLS  
HAVE IMPROVED MATERIAL HANDLING AND THE WAY  
WORK IS PERFORMED.**

SCENE 7

Donnelly exterior in mortise, top  
1/2 then with lower 1/3<sup>rd</sup> super:  
Donnelly Corporation

042807 exterior

NARRATION (VO) :

**AT DONNELLY CORPORATION... WHERE VISUAL CONTROLS  
HAVE INSPIRED NEW IDEAS FROM EMPLOYEES,  
INCREASED EFFICIENCY AND SAVED TIME, EFFORT  
AND MONEY.**

SCENE 8

FORD Display area in mortise,  
Super "Ford, Romeo Engine" lower  
1/3<sup>rd</sup> over BG, then to Gerald  
taking a digital photograph

132600 display area

132453 Klandru walking

NARRATION (VO) :

**...AND FINALLY, AT FORD'S ROMEO ENGINE PLANT  
WHERE HOURLY PEOPLE CREATE THEIR OWN VISUAL  
CONTROLS WITH HELP FROM AN ON-STAFF VISUAL  
FACTORY SPECIALIST.**

-FTB-

SCENE 9

NARRATION:

DIS TO: VCs per narration

130814 oil filter install  
032322 sign zoom to inventory  
131519 flashing lights  
111400 ceiling sign  
061600 man working

VISUAL CONTROLS ARE USED TO COMMUNICATE HOW A JOB IS DONE, WHERE INVENTORIES GO, EVEN EXACTLY WHERE TO KEEP TOOLS. SOME VISUAL CONTROLS TELL EMPLOYEES THE STATUS OF THEIR MACHINES, WHILE OTHERS SHOW MACHINE LOCATIONS. TIME WASTED LOOKING FOR TOOLS OR MATERIALS CAN BE ELIMINATED WITH EFFECTIVE VISUAL CONTROLS.

SCENE 10

NARRATION:

DIS TO: various shots of visual controls.

061840 pan worker to board  
091645 teamwork banner

VISUAL CONTROLS ARE A WAY TO IMPROVE COMMUNICATION, ENHANCE THE FACTORY ENVIRONMENT, BOOST MORALE AND HELP MANUFACTURING COMPANIES GAIN A COMPETITIVE EDGE.

SCENE 11

NARRATION:

DIS TO: locations signs, labels on floors, footprints on floor, signs above machines, how to VCs.

131221 manifold bolts VC  
031130 chart  
091612 silver coating area sign  
092155 floor markings to workers

EFFECTIVE VISUAL CONTROLS ARE SIMPLE BUT POWERFUL. THEY MAKE WORKING AREAS "USER FRIENDLY" BY ANSWERING QUESTIONS, SHOWING LOCATIONS AND DESCRIBING ACTIONS VISUALLY. LIKE HIGHWAY SIGNS OR STADIUM SEATING DIRECTIONS, VISUAL CONTROLS CAN HELP EMPLOYEES AVOID WASTING TIME. SOME COMPANIES HAVE FOUND VISUAL CONTROLS SO HELPFUL THAT THEY'RE EVEN

USING THEM IN OFFICES AREAS.

SCENE 12

DIS TO: 5-Ss poster

121930 WS 5S poster  
121956 MCU pan poster

CG build per narration:

SORT  
to organize

STABILIZE  
Find a place  
for everything

SHINE  
cleanliness

STANDARDIZE  
Create conformity

SUSTAIN  
Monitor and stick  
to the rules

SCENE 13

DIS TO: someone sweeping.

SCENE 14

DIS TO: various visual controls

122321 large book of charts  
030520 housekeeping chart  
131356 contamination sign

NARRATION:

VISUAL CONTROLS, IDEALLY, BEGIN WITH AN IMPROVEMENT INITIATIVE CALLED THE 5 Ss, WHICH STAND FOR 5 JAPANESE WORDS THAT MEAN... SORT... STABILIZE... SHINE... STANDARDIZE... AND SUSTAIN. SORT MEANS TO ORGANIZE AN AREA, ELIMINATING THINGS THAT DON'T BELONG. STABILIZE MEANS TO FIND A PLACE FOR EVERYTHING AND TO KEEP EVERYTHING IN ITS PLACE. SHINE IS SIMPLY CLEANLINESS. STANDARDIZE MEANS TO CREATE CONFORMITY IN EACH AREA OF A PLANT WITH VISUAL CONTROLS, AND FINALLY, SUSTAIN MEANS TO MONITOR AND STICK TO ALL THESE RULES.

NARRATION:

THE 5 Ss CREATE AN ENVIRONMENT THAT IS CLEAN, ORGANIZED AND COMFORTABLE, ELIMINATING UNNECESSARY ITEMS AND ORGANIZING IMPORTANT EQUIPMENT.

NARRATION:

VISUAL CONTROLS ARE NEITHER EXPENSIVE NOR DIFFICULT TO INSTITUTE. THEY ARE EFFECTIVE

041818 WS scale

AND EASILY ACCEPTED BECAUSE THEY MAKE TASKS  
EASIER. THEY PROVIDE INFORMATION ABOUT THE  
ENVIRONMENT, THE JOB ITSELF, JOB PERFORMANCE,  
AND SAFETY. IN FACT, SOME EMPLOYEES HAVE  
DISCOVERED TIMESAVING SOLUTIONS TO EVERYDAY  
PROBLEMS BY USING VISUAL CONTROLS.

SCENE 15

NARRATION:

DIS TO: people working  
030420 performance chart

SOME APPLICATIONS OF VISUAL CONTROLS CAN SERVE  
AS EMPLOYEE MOTIVATION. WHEN GOALS FOR COST,  
QUALITY AND DELIVERY ARE MET, PEOPLE WANT TO  
BE IN A GROUP THAT PERFORMS WELL.

SCENE 16

NARRATION:

DIS TO: a clean and uncluttered  
workplace.  
060736 motivational signs  
130740 prox./people working

USING VISUAL CONTROLS PROMOTES A WORKPLACE IN  
WHICH COMMUNICATION AND EMPLOYEE INVOLVEMENT  
IS ENCOURAGED. CONSEQUENTLY, EMPLOYEES BETTER  
UNDERSTAND THEIR ROLE AND EAGERLY CONTRIBUTE  
TO THE SUCCESS OF THE COMPANY.

-FTB-

SCENE 17

NARRATION:

Fade up on mortise over BG with  
lower 1/3<sup>rd</sup> CG: BREED TECHNOLOGIES  
Mortise: 092032 electronic sign -  
show BREED being spelled  
out  
092301 parts on board

BREED TECHNOLOGIES, LOCATED IN KNOXVILLE,  
TENNESSEE, IS A GLOBAL SUPPLIER IN THE DESIGN,  
DEVELOPMENT AND MANUFACTURE OF AUTOMOTIVE  
OCCUPANT RESTRAINT SYSTEMS AND COMPONENTS.

SCENE 18

DIS TO: 091510 floor marking zoom  
out to pallet

DIS TO: 090307 Larry Huskey with  
super: LARRY HUSKEY, QUALITY  
SYSTEMS LEADER, BREED TECHNOLOGIES

NARRATION:

BREED STARTED USING VISUAL CONTROLS IN 1997 AS  
PART OF THEIR VISUAL FACTORY MANAGEMENT OR VFM  
SYSTEM. LARRY HUSKEY, THEIR QUALITY SYSTEMS  
LEADER WAS CHARGED WITH IMPLEMENTATION.

SCENE 19

Continue above w/SOT

HUSKEY: 09:03:12-09:03:28

We had weekly meetings and we had  
representatives from each department, some of  
the people were either salary people or hourly  
people. And we listed a set of goals we  
wanted to have; we wanted to have commonality,  
and we wanted to develop a color-coding  
scheme, which is very important in VFM.

SCENE 20

DIS TO: 101723 Susan Dotson with  
super: SUSAN DOTSON, MANAGER,  
PRODUCT ENGINEERING, BREED  
TECHNOLOGIES

NARRATION:

SUSAN DOTSON, THEIR MANAGER OF PRODUCT  
ENGINEERING HAS BEEN INVOLVED IN DEVELOPING  
VISUAL CONTROLS IN THE ENGINEERING OFFICES.

SCENE 21

DOTSON: 10:17:28 - 10:18:09

Continue above w/SOT then to:

The purpose is to make sure that everyone knows exactly what they need to do and when it needs to be done. It eliminates the need for planners, tracking things individually on calendars, it's more concise and easy to read.

092102 colored tag

We use color--in the different applications

092358 kanban card

the color can tell us who the customer is, it

092422 red tag

can tell us which program we're working on,

who the owner is that's responsible for

resolving any issues with a particular part.

SCENE 22

HUSKEY: 09:01:55 - 09:02:12

DIS TO: Huskey OC then to:

They provide information to the employee so they can do their job and have less

091955 quality boards

interaction with management, and they can look at the board and readily see where they're at relative to their production rates and to their quality levels, and how the company is doing overall as a whole.

SCENE 23

DIS TO: visual controls that  
utilize color-coding.

092701 PM boards MS

092819 hanging signs

092617 andon lights

NARRATION:

COLOR IS AN IMPORTANT PART OF VISUAL CONTROLS  
BECAUSE IT CAN MAKE THINGS EASILY  
RECOGNIZABLE. BUT PICTURES, DRAWINGS, LARGE  
LETTERING, NUMBERS, SYMBOLS EVEN ELECTRONIC  
SIGNS ARE ALL USED.

SCENE 24

DIS TO: 111418 spools of thread  
091355 critical success  
charts- must not be  
readable,

then to Dotson OC.

DOTSON: 10:27:42 - 10:28:06

Simple information is most effective. People  
are very busy, they don't have time to read a  
bunch of charts, go through a bunch of  
schedules. That's why the kanban cards, the  
visual constraints cards, all of the 5S  
improvements we've made in the plant have  
helped us so much, because it's so simple.

SCENE 25

DIS TO: Electronic message board  
WITHOUT SME welcome on it:091449

then to board shot 092004

then to bin tag 092401

then to Huskey OC.

HUSKEY: 09:04:22 - 09:04:51

We are using electronic message boards, which  
are essentially controlled by a computer,  
where we send messages at prescribed times  
throughout the different departments. We're  
using a lot of magnetic boards that can be  
written on, or we can put magnetic signs on as  
well. We're using things called bin tags,  
where we identify each container, the next  
process it's supposed to go to. It has the  
name of the process, and it's also color-



coded.

SCENE 26

DIS TO: 110256 cleaning station  
092210  
092250  
100447

NARRATION:

LONG BEFORE ANY SIGNS ARE MADE, THE PROCESS  
BEGINS WITH THE 5 Ss... IT'S A NECESSARY STEP  
THAT USUALLY MEANS A BIG CLEAN-UP FOR MOST  
FACILITIES.

SCENE 27

DIS TO: Dotson OC then shots of  
different areas of the plant.  
  
091510 floor marking and pallet

DOTSON: 10:22:07 - 10:22:51

It's night and day... We were pretty much in  
total chaos within the factory, when you  
walked into the plant, material was  
everywhere. We had excessive inventory in all  
areas, and through visual management,  
(implementation of the Toyota production  
systems kanban system,) we've been able to  
reduce inventory drastically, improve quality,  
there have been many improvements to  
productivity.

SCENE 28

DIS TO: Inside of office supply  
cabinet 101222 then to Dotson OC

DOTSON: 10:28:31 - 10:29:08

Basically it means a place for everything,  
that everything should be labeled and kept in  
its place..

SCENE 29

DIS TO: 111439 PM cards build to  
continue into sc 31

Also 091804-091934 if necessary

NARRATION:

ALL INFORMATION IS POSTED WHERE IT IS NEEDED,  
NOT FILED AWAY IN AN OFFICE. FOR EXAMPLE,  
PREVENTIVE MAINTENANCE OR PM SCHEDULING USED  
TO BE OVERLOOKED BEFORE VISUAL CONTROLS WERE  
IN PLACE.

SCENE 30

Continue above sequence then to  
Huskey OC

HUSKEY: 09:10:44 - 09:11:18

... you would have to go find the notebook,  
thumb through maybe 20 or 30 pages, and make a  
review to make a determination. Now we have a  
VFM board that we developed here ourselves,  
and we actually can track, by simply walking  
by we can see the status of the preventative  
maintenance activities on a particular piece  
of equipment.

SCENE 31

DIS TO: 111537 Andon Lights  
pictures w/explanation then to  
Dotson OC

DOTSON: 10:21:11 - 10:21:51

... the overall boards in the factory make it  
very visible for each area to see where their  
constraints are, what's going on with the  
Andon lights. They know what's wrong with a  
particular process, whether it's down for  
maintenance, down for a part ...

SCENE 32

HUSKEY: 09:11:35 - 09:11:45

DIS TO: Huskey OC

...the whole thought process is to get the information to the employees, and to do it in such a way that they can comprehend it and they also can retain it.

SCENE 33

NARRATION:

DIS TO: 092210 VC in line and employees working.

DESPITE SOME SKEPTICISM IN THE BEGINNING, BREED EMPLOYEES HAVE REALLY GOTTEN BEHIND VISUAL CONTROLS.

SCENE 34

HUSKEY: 09:11:48-09:12:02

DIS TO Huskey OC.

It gives them a sense of being a member of the team, and to want to be able to make the metrics that are being tracked, to see them excel in those areas, so it gives them a sense of accomplishment.

SCENE 35

NARRATION:

DIS TO: various of Breed Plant

092859 WS zoom to signs

100548 Critical Success Factors  
must not be readable

101204 key dates board

BREED TECHNOLOGIES BELIEVES STRONGLY IN THE EFFECTIVENESS OF VISUAL CONTROLS. THEY SEE THEM AS SIMPLE BUT EFFECTIVE WAYS TO IMPROVE COMMUNICATION AND INCLUDE EMPLOYEES IN THE DECISIONS THAT CREATE CUSTOMER VALUE.

SCENE 36

HUSKEY: 09:06:14 - 09:06:23

DIS TO: Huskey OC.

We've had dramatic gains in our delivery with increases of almost 30 %, and we're very close to 100 % at this time.

-FTB-

SCENE 37

NARRATION:

Fade up on mortise over BG with lower 1/3<sup>rd</sup> CG: DELPHI AUTOMOTIVE

THE DELPHI AUTOMOTIVE SYSTEMS PLANT IN ADRIAN, MICHIGAN, MANUFACTURES AUTOMOTIVE COMPONENTS AND INTERIOR SYSTEMS. VISUAL CONTROLS ARE SEEN AS AN IMPORTANT PART OF A COMPANY-WIDE APPROACH TO LEAN MANUFACTURING PRINCIPLES.

Mortise: Exterior shot of Delphi Building.071600

SCENE 38

QUINLAN: 05:04:09 - 05:04:39

DIS TO: Quinlan OC then to various shots of VCs at Delphi with super: KEVIN J. QUINLAN, PRODUCTION MANAGER, DELPHI AUTOMOTIVE SYSTEMS

As the workgroup functions through the day, they don't need to wait for a supervisor to come back to tell them how they're doing or a report to be issued the following day, they can tell real time how they're doing as a group and respond to that, so they can make an adjustment in a lean atmosphere immediately,

061233 people working

061420 man working

so you don't get the redundant defects, or increased downtime.

SCENE 39

NARRATION:

DIS TO: 061118 CU charts  
060420 process charts  
060340 workshop charts

VISUAL CONTROLS ARE ABOUT EFFECTIVE COMMUNICATION AND EMPOWERMENT FOR DELPHI, GIVING DECISION-MAKING ABILITY TO EVERY EMPLOYEE. THEY WANT NOT ONLY TO ENSURE THE INVOLVEMENT OF ALL THEIR EMPLOYEES, BUT TO PROMOTE THEIR TIMELY DECISION MAKING AS WELL.

SCENE 40

QUINLAN: 05:14:37 - 05:15:06

DIS TO: Quinlan OC then to an area at the plant that shows visual controls at work.

... you want to be able to walk into an area and tell by looking around what's going on without having to ask anybody, and you want those visual controls to be something the operators can use and understand so that they can make decisions.

062020 WS line zoom to counter  
062107 " " " " "

SCENE 41

NARRATION:

DIS TO: 062248 floor markings  
062512 rack identifier  
062220 tag on parts

AT DELPHI, VISUAL CONTROLS COMMUNICATE PERTINENT INFORMATION INSTANTLY TO HELP ELIMINATE MISTAKES. DESPITE THE COSTS DELPHI BELIEVES THE ADVANTAGES OF THIS KIND OF COMMUNICATION AND EMPOWERMENT GO RIGHT TO THE BOTTOM-LINE.

SCENE 42

DIS TP: Quinlan OC then to examples of VCs.

070835 VC parts in racks  
060509 Communication Center  
070332 quality board

QUINLAN: 05:10:49 - 05:11:19

We can see that very explicitly in our financial results here at this plant. There has been substantial improvement in those. There is some cost, to build kiosks, information centers, time to distribute information, but the cost of doing those things is very, very small in comparison to the cost of not doing them.

SCENE 43

DIS TO: Quinlan OC then to several VCs that look alike.

060041 key goals board  
060229 safety chart  
060250 gap assessment  
060948 6-sided board w/charts

QUINLAN: 05:03:43 - 05:04:00

... You want to be able to walk in and know what's happening in the area just by being there. You don't want to have to search out a report or a supervisor or manager to find out what's happening. -EDIT- So we try to set a standard that the visual controls need to achieve, and then turn the workgroup loose on determining how they work. Once we've done that a number of times, we standardized that across the plant.

SCENE 44

DIS TO 061928 CU charts

NARRATION:

VISUAL CONTROLS AND LEAN MANUFACTURING ARE EFFORTS TO RESPOND TO GROWING COMPETITION. THEY CHANGE THE WAY INFORMATION IS COMMUNICATED, THE WAY DECISIONS ARE MADE.

SCENE 45

DIS TO: Quinlan OC

QUINLAN: 05:21:39 - 05:22:02

The days when you could just pass directives down or write memos and expect that the workforce was going to snap to are largely gone, and we won't be successful in that environment. It takes too many managers to operate that way, and employees, frankly, are more educated and more intelligent, and really won't tolerate it. So if you're going to have a good employee base and you're going to succeed in the marketplace, you're going to have to do this.

070100 WS PLANT FLOOR

060642 women working

070153 electronic counter

SCENE 46

DIS TO CG COLLAGE: FORD, GM, DaimlerChrysler, Honda, Toyota, Nissan, Volvo, VW, Hyundai, Suzuki, Kia, Saturn, Porsche, Jaguar,

NARRATION:

WHILE EXTERNAL COMPETITION DRIVES THE NEED FOR LEAN METHODOLOGIES, INTERNAL COMPETITION HELPS DRIVE ITS IMPLEMENTATION AND THE INVOLVEMENT OF ALL EMPLOYEES.

SCENE 47

DIS TO: Quinlan OC

QUINLAN: 05:06:39 - 05:07:12

After they had the training program, they broke them into teams by value stream and challenged each value stream to make the

060330 GAP assessment charts  
060100 key goals

improvements that they needed to... We have a measurement system in our Delphi Manufacturing System that allows us to score each independent element of how lean we are, whether the visual controls are in place, etc. So we created a bit of a competitive environment in each value stream.

SCENE 48

DIS TO: 061645 people working

NARRATION:

DELPHI FEELS THEY'VE REALIZED SUBSTANTIAL BENEFITS IN MOST AREAS OF THEIR BUSINESS BY USING VISUAL CONTROLS.

SCENE 49

DIS TO: continue 061645

062200

062922

060420

Quinlan OC then to shots of the plant and people working.

QUINLAN: 05:20:35 - 05:21:20

... our inventories go down, our manpower requirements go down, our quality improves, our health and safety improves so we spend less money on employees who are off work with injuries. It creates a cleaner, neater environment so the employees don't mind coming to work. None of us want to work in an environment where it's greasy and smoky and dirty. No one wants to work in an environment where they don't understand what the objectives are or why the decisions that are



being made are being made. My belief is that it makes it a better place to work, it makes us more successful in the marketplace..

SCENE 50

DIS TO: 070958 CommCenter

NARRATION:

VISUAL CONTROLS ARE MAKING POSITIVE CHANGES IN DELPHI PLANTS BECAUSE OF HARD WORK AND COMMITMENT.

SCENE 51

DIS TO: Quinlan OC

QUINLAN: 05:22:35 - 05:22:57

Conflicts arise, people get discouraged, something you try doesn't work and you take a step backwards, so there are a lot of reasons that make it difficult. But it's also very exciting, because when you look back at the end of the year, you may be frustrated about the challenges you're facing now, but in a year's time, if you do it properly, a lot of gain has been made and people feel good about it.

SCENE 52

Fade up on mortise over BG with  
lower 1/3<sup>rd</sup> CG: DONNELLY  
CORPORATION

Mortise: 042846 Exterior shot of  
Donnelly Building, Bring mortise  
full screen...

040937

NARRATION:

DONNELLY CORPORATION, BASED IN HOLLAND,  
MICHIGAN, IS A LEADING MANUFACTURER OF  
AUTOMOTIVE MIRRORS, WINDOWS AND DOOR HANDLES.  
THEY ARE NATIONALLY RECOGNIZED AS A LEADER IN  
THE APPLICATION OF PARTICIPATIVE MANAGEMENT  
PRINCIPLES, A SYSTEM THEY CALL THE DONNELLY  
MANAGEMENT SYSTEM.

SCENE 53

DIS TO: Jim Brodie OC with  
super: JIM BRODIE, DIRECTOR OF  
NORTH AMERICAN OPERATIONS,  
DONNELLY CORPORATION

030135 people working

BRODIE: 02:10:05 - 02:10:24

... we go out to the employees and we lay out a  
vision and we educate them as to where we want  
to go and why we want to get there, and then we  
ask them to help us figure out how we're going  
to accomplish that. So the layout of the work  
cell, that's theirs. Every time I walk the  
production floor I see something different,  
because I had to let go, I had to give them the  
authority and the power, and once they realized  
they had the authority and the power, then they  
were now part owner in the whole process.

SCENE 54

DIS TO: 030959 man working

NARRATION:

THE KEY TO EFFECTIVE VISUAL CONTROLS IS EMPLOYEE INVOLVEMENT. AT DONNELLY, VISUAL CONTROLS CHANGED THE WAY THE PLANT LOOKS, EMPLOYEE ATTITUDES AND PRODUCTIVITY AS WELL.

SCENE 55

DIS TO: Weigerink with super:  
GRACE WIEGERINK, MANUFACTURING  
MANAGER, DONNELLY CORPORATION,  
then to WSs inside plant

WIEGERINK: 01:07:12 - 01:07:32

Before we did the visual systems, every work cell was different. You didn't know what you would find in a work cell there was no standardization. Now you can easily go from cell to cell and you know where to find information and you know what information would be there

SCENE 56

DIS TO: 032733 & 032830 WSs  
inside the plant then to Brodie  
OC

BRODIE: 020909 - 020916 -E- 200926 -

020948

Now this is a model of DPS, and I spend a significant amount of my time, more than I'd like, leading tours and leading benchmarking crews through. The morale here is better than in most of the other operations, they're continuing to get their profit-sharing bonus checks, because they are continuing to perform better than plan. They're actively involved and participate.

SCENE 57

DIS TO: 030450 chart

032550 scale w/closeup

NARRATION:

GOOD VISUAL CONTROLS HELP TO INSTANTLY IDENTIFY PROBLEMS, TRACK PRODUCTION RATES AND IMPROVE OVERALL PERFORMANCE. IN ONE CASE, A SCALE PROVIDES THE VISUAL CONTROL THAT TELLS WHEN TO REFILL A TANK. THE SCALES HAVE REDUCED THE TIME IT TAKES TO OPEN THE TANK PERIODICALLY JUST TO MEASURE ITS CONTENTS.

Scene 58

DIS TO: 032153 Andon lights

042611 floor markings

042630 floor markings

031040 tool board

042410 TAKT counter

BRODIE: 02:07:13 - 02:07:51

Visual controls are allowing us to very quickly react to any non-normal condition. It helps us identify when anything is out of place. Whether the 5S in a work cell we can identify a component or a box of materials that's not where it needs to be. A tool board that is shadowboxed, we can identify a missing tool before it shuts down an operation. The performance, hour by hour, minute-by-minute within a work cell so we can identify whether we're running at the rate we need to.

Brodie OC

SCENE 59

WIEGERINK: 01:05:22 - 01:05:48

DIS TO:

040956 graph chart to man  
working

041540 scrap chart

031229 process control graph

then to Wiegerink OC.

We have our daily graphs that we do, we have scrap output and downtime graphs, and at the end of the shift the operator fills in their graph and the amount of time or pieces that they had. It makes it very visual if a group leader or a manager walks through the area, they can see at a glance what the performance is of that work cell or any unusual conditions going on there.

SCENE 60

NARRATION:

0421215 TAKT counter

030551 floor marking  
031040 tool board

DONNELLY USES TAKT TIME COUNTERS TO STAY ON PACE WITH PRODUCTION GOALS. THEY ALSO USE FLOOR MARKINGS AND TOOL SHADOW BOARDS TO IDENTIFY MATERIAL OR TOOLS THAT ARE OUT OF PLACE.

SCENE 61

BOSS: 01:22:15 - 01:22:31

DIS TO: 032153 Andon lights

then to Boss OC WITH SUPER:  
JEFF BOSS, GROUP LEADER,  
DONNELLY CORPORATION

The Andon lights that we use, red light, green light, the machine is running, the machine is down. We've got blue light that calls for materials. We're in the process of adding a yellow light that would be a call for support or

equipment maintenance people.

SCENE 62

DIS TO: 030735 preventive  
maintenance box

030829 CU PM card

NARRATION:

DONNELLY BUILT BOXES TO HOLD PREVENTIVE  
MAINTENANCE OR PM CARDS. ONCE EACH DAY THE  
OPERATOR CHECKS TO SEE WHAT PREVENTIVE  
MAINTENANCE NEEDS TO BE DONE.

SCENE 63

DIS TO: 031305

NARRATION:

OTHER VISUAL CONTROLS HELP WITH PLANNING FOR  
SET-UPS.

SCENE 64

DIS TO:041220 tool change board

WIEGERINK: 01:09:26 - 01:09:50 prox

then to Wiegerink OC.

032324

032910

We have what we call a mold tool change board  
where we have a kanban card for every mold, and  
we have that laid out by days of the week, so  
the setup guys can look at that and see, during  
this week what tool changes will I have coming  
up. We have areas on the dock identified for  
engineering materials coming in, overflow  
materials.

SCENE 65

DIS TO: 031815 key measurements

041540 scrap charts

042115 TAKT Time

041859 man sweeping

030617 PM checklist

NARRATION:

DONNELLY STARTED WITH 3 KEY MEASURES IN EACH WORK CELL: OUTPUT, DOWNTIME AND SCRAP. THEY WANTED TO SEE TRENDS AND THEIR PROGRESS. THEN, USING THE FIVE-Ss THEY CLEANED AND ORGANIZED THE CELLS. NEXT, PREVENTATIVE MAINTENANCE WAS PUT IN PLACE TO IMPROVE EQUIPMENT RELIABILITY.

SCENE 66

DIS TO: Brodie OC

BRODIE: 02:21:12 - 02:21:31

... then we needed to take it a little bit further and tie in the plant performance to work cell performance. So that was the next step, to get the teams to actually own their performance measurements for the year. Once they owned them, they felt more inclined to countermeasure and react to the results than when we were giving the results

SCENE 67

DIS TO: 031410 achievement chart

NARRATION:

DONNELLY HAS SHOWN SOME IMPRESSIVE RESULTS SINCE IMPLEMENTING THEIR VISUAL CONTROLS AND OTHER DONNELLY PRODUCTION SYSTEM IMPROVEMENTS.

SCENE 68

DIS TO: Shot panning down the slope of the line on the big quality board outside the café.

BRODIE: 02:10:55 - 02:11:05

... our labor productivity as a percent of

production has improved by about 30 percent.

Our quality has improved from 1200 ppm down to  
60 ppm with our customers

FIND

SCENE 69

Fade up on mortise over BG with  
lower 1/3<sup>rd</sup> CG: ROMEO ENGINE  
PLANT, FORD MOTOR COMPANY

Mortise: 132544 Romeo Display  
Area

Bring mortise full screen and  
continue various shots of Romeo  
Plant.

130953 people working

131432 Klandru taking photo

NARRATION:

AT THE FORD MOTOR COMPANY ENGINE PLANT IN ROMEO,  
MICHIGAN, MANAGEMENT PROVIDES GUIDANCE AND  
SUPERVISION, BUT THE ACTUAL CONTROLS AND THEIR  
DEVELOPMENT COME FROM THE PEOPLE ON THE LINE. A  
FULL TIME EMPLOYEE USING COMPUTERS, CAMERAS AND  
PRINTERS, THEN DOES THE PRODUCTION OF ALL THEIR  
VISUAL CONTROLS.

SCENE 70

DIS TO: Klandrud OC with super:  
JERRY KLANDRUD, VISUAL FACTORY  
SPECIALIST, FORD ROMEO ENGINE  
PLANT, then to people in the  
plant working.

KLANDRUD: 12:07:51 - 12:08:10

... we've found that who knows better how to do  
the job than the people that are doing it. They  
tell us when they need something corrected, they  
actually tell me when I've done something wrong.

SCENE 71

DIS TO: 131239 VC zoom out to  
line

NARRATION:

VISUAL CONTROLS AT FORD ARE DESIGNED TO MAKE  
JOBS EASIER FOR THE EMPLOYEES. THIS HELPS  
ELIMINATE MISTAKES.



SCENE 72

DIS TO: Klandrud OC then to:

132006 CU of VC or

131842 VC zoom out to line

KLANDRUD: 12:02:48 - 12:03:08

... they take a lot of stress out of the employees that are trying to do the job by having something there that they can look at that shows them how to do the job, and how to do the job properly. When we do a visual aid, we try to show how, in what order the job should be done, and that cuts back on the number of misbuilds and engines that end up going into repair bays.

SCENE 73

DIS TO: 131455 people working

NARRATION:

THE INFORMATION COMMUNICATED BY VISUAL CONTROLS ENABLES A GREATER DEGREE OF INDEPENDENCE FOR THE WORKFORCE.

SCENE 74

DIS TO: 131636 workers to VC

Klandrud OC then to people working.

KLANDRUD: 12:10:43 - 12:10:55 - E - 12:10:57 - 12:11:07

... it gives them more control, a lot more control on their work environment, more control on what they do. They have more say-so on how things are put together and how things are done.

SCENE 75

DIS TO: 132152 find good shot in  
this sequence of pipe cleaning

NARRATION:

AS FORD IMPLEMENTED THE 5-Ss THEY HAD SOME  
PLEASANT SURPRISES.

SCENE 76

DIS TO: 132055 red tag area

then to Klandrud OC

KLANDRUD: 121636-121648 -E- 121709-121724

... one of the processes is what we call a red  
tag. What you do is you tag everything that's  
in the area that doesn't belong there and you  
take that to a red tag area. -EDIT- We found  
things in the building that were lost for 2-3  
years. They were just laying somewhere behind a  
machine where it was left, and in the red tag  
process we found those products and brought them  
back to use.

SCENE 77

DIS TO: 132251 Floor markings

NARRATION:

VISUAL CONTROLS CAN BE MORE THAN JUST SIGNS OR  
INSTRUCTIONS. FLOOR MARKINGS COMMUNICATE A  
GREAT DEAL OF INFORMATION ABOUT PLANT GEOGRAPHY,  
INVENTORY AND EVEN SAFETY.

SCENE 78

KLANDRUD: 121729 - 121744

DIS TO: Klandrud OC

We mark all our floors where things belong.  
That way if something is marked and there's  
nothing on it, we know something's out of place.  
We even mark the floors as far as where the  
employees should walk and the hi-lo's shouldn't  
be driving, so that gives us a safety edge too.

132349 person walking path

SCENE 79

NARRATION:

DIS TO: 122602 WS plant floor

IN A MANUFACTURING ENVIRONMENT AS LARGE AS FORD,  
SOMETIMES DIFFERENT PEOPLE WORK DIFFERENT JOBS.  
FORD'S FOCUS IS DIRECTED AT GETTING EACH JOB  
DONE RIGHT NO MATTER WHO IS DOING IT.

130800 people working

131724 WS engine line

130855 oil filter VC

SCENE 80

KLANDRUD: 120853 - 120901

DIS TO: 131432 Klandrud taking  
digital photo

... we started adding a lot more digital  
photography into the visual aids, so now you  
know exactly what you're looking at, and exactly  
how to hold it.

SCENE 81

NARRATION:

DIS TO: 131008 VC over line zoom

FORD ROMEO'S VISUAL CONTROLS HAVE IMPROVED  
ENGINE QUALITY.

SCENE 82

KLANDRUD: 12:11:52 - 12:12:29

DIS TO: Klandrud OC

131104 lights w/numbers zoom

I know the company saves a lot in warranty rejects. We don't get nearly as many because we don't have the misbuilds, so there there's a lot of savings. And people going to medical because of ergonomic problems, we save a lot there because we don't have as many people with ergonomic aches and pains. We get better productivity out of them, better production. - EDIT- Morale has gone up, because more people being able to have involvement in what they're doing on the job instead of being told what to do.

SCENE 83

NARRATION:

DIS to CG Build:

DECREASED MEDICAL ISSUES

INCREASED PRODUCTIVITY

IMPROVED MORALE

DECREASED MEDICAL AND ERGONOMIC ISSUES,  
INCREASED PRODUCTIVITY AND IMPROVED MORALE...  
THESE ARE THE ADVANTAGES THAT RESULT FROM  
ROMEO'S VISUAL CONTROL EFFORTS.

SCENE 84

NARRATION:

DIS TO: 131305 glove VC

131048 manifolds

122232 FPS measurables

VISUAL CONTROLS ARE A SIMPLE, RELATIVELY EASY  
METHODOLOGY THAT HAS A TREMENDOUS EFFECT ON THE  
MANUFACTURING ENVIRONMENT AND THE PEOPLE WHO USE  
THEM.

-FTB-

SCENE 85

NARRATION:

DIS TO:

091737 work order comms. board  
060143 pan keys goals board  
030940 PM card

VISUAL CONTROLS ARE AN INNOVATIVE METHOD OF PROVIDING INFORMATION TO EMPLOYEES IN A VERY SIMPLE MANNER, IN ORDER TO IMPROVE COMMUNICATION.

SCENE 86

NARRATION:

DIS TO:

THEY ARE PART OF A PROCESS BY WHICH A WORK AREA CAN BE CLEANED, ORGANIZED AND SIMPLIFIED.

SCENE 87

NARRATION:

DIS TO: 031620 business  
scoreboard

031650 customer prospect  
031745 safety, quality  
031410 achievement brds

THEY ARE A STEP IN A PROCESS TOWARD THE VISUAL FACTORY IN WHICH INFORMATION IS OPENLY AND SYSTEMATICALLY SHARED TO EMPOWER EMPLOYEES AND INCREASE PRODUCTIVITY.

SCENE 88

NARRATION:

DIS TO: 131432 Klandru taking  
photo

041859 man sweeping  
(031335 housekeeping  
scoreboard)

EMPLOYEE INVOLVEMENT IS CRUCIAL TO THE SUCCESS OF VISUAL CONTROLS BUT THE INHERENT COMPETITIVE NATURE AND APPEAL OF THE METHODOLOGY INVOLVES PEOPLE AND MAKES THE PROCESS SELF-SUSTAINING.

SCENE 89

NARRATION:

DIS TO CG:

BENEFITS OF VISUAL CONTROLS

CLEAN, SAFER WORKPLACE  
DECREASED INVENTORIES  
LESS WASTED TIME  
IMPROVED MORALE  
IMPROVED PRODUCT QUALITY

THE BENEFITS OF USING VISUAL CONTROLS INCLUDE... A CLEAN AND SAFER WORKPLACE, DECREASED INVENTORIES, LESS WASTED TIME, IMPROVED MORALE AND IMPROVED PRODUCT QUALITY.

SCENE 90

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SCENE 91

FADE UP:SME logo then FTB