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Increasing Operator Skills in a Manufacturing Environment

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INCREASING OPERATOR SKILLS IN A MANUFACTURING ENVIRONMENT

Submitted by

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MASTER OF EDUCATION

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Abstract

A plastic-injection molding facility is converting many machines into more automated systems. These complex systems require higher-level skill sets than current operators have been trained in. There is a need to increase the level of competency in most, if not all, of the operators at the Facility, and create a system of levels that engages employees and encourages learning new skills to increase their position and pay.

There is a need for a clear path of compensation based on skills and actions. The Facility is currently not optimizing or maximizing their current portfolio of machines and resources, leaving an unknown capacity. With the future of the facility residing in automation and robotics, capital investments will not be made to continue to automate machines without showing it is able to maximize current assets.

Keywords: manufacturing, employee engagement, performance, standardization, kaizen, process improvement

Project Background

An injection molding facility is currently operating below industry standards as a result of stagnancy in continuous improvement. In order to receive capital from the corporation, the facility needs to maximize their current capacity. In order to maximize their current capacity, they must assess the efficiency of a machine running at its maximum run time based on manufacturing standards. The gap between its standard run rate, and the proven run rate, is drastic. There is a belief in the organization that this gap is due to operator skills.

Although an onboarding training plan is in place, and a skill development plan has been created, the implementation of the onboarding process has been poor, resulting in operators with limited skills, particularly in troubleshooting machine issues. There is currently no verification of skills and knowledge for operators on a regular basis, to refresh skills/knowledge or identify gaps in these areas. This leads to poor insight to the actual quality of the operators' performance, which is why the maximum run rate and proven run rate has been used as a guideline for identifying this gap.

Organizational Goals

Higher-level skill is needed to operate machines as they become more complex. Employee engagement and training is necessary to increase skill level and encourage skill-growth through operator levels. Proper implementation of current instructional strategies needs to be utilized as well.

Project Stakeholders

Project stakeholders include the injection molding manufacturing facility, the customers who receive the product, and the operators performing the tasks.

Analysis Plan

The analysis plan was conducted in three phases: (1) a Literature Review was conducted using evidence-based research on topics related to the project, (2) downtime analysis of a pre-determined time constraint was performed to determine problem areas in operator skills, and (3) interviews, surveys, and observations were conducted to involve employees, create employee buy-in, and encourage employee engagement.

Literature Review

Identifying the Largest Bottleneck(s) in Operator Error

Before identifying where to begin process improvement among operator skills, it had to be determined where the greatest need was. According to Aqlan (2018), prioritizing workplace areas for improvement opportunities consists of:

(1) variation in process time

(2) ratio of workmanship defects to throughput

(3) practice versus procedure

(4) ratio of cycle time to takt time (p. 262)

Once the areas have been identified, Aqlan (2018) goes on to say that "…required data are collected from different resources including databases, time studies, and surveys" (pps. 262-263).

Employee Buy-in and Engagement

In order to help employees effectively retain the information that will be provided, there needed to be a way to engage the employee and allow them to participate in the change. One of

the ways to institute this change in employee attitudes is to have a leadership style that encourages employee satisfaction. According to Colbert (2012) "certain leadership behaviors have a strong impact on employee engagement… (a) being transparent; (b) enrolling employees in change activities; (c) involving employees; (d) connecting the dots for employees; and (e) rewarding and recognizing employees" (p. iv). There are significant advantages to having engaged employees, including increased retention. According to Lockwood (2006), higher-engaged employees are "20% more likely to perform better and 87% less likely to leave the organization than less-engaged employees" (p. 4). Outcomes that help the business include "greater productivity, higher retention rates, fewer accidents, and lower absenteeism" (Fleming, 2009, p. 7).

Building Content and Instructional Design

After understanding the largest gaps and receiving buy-in from employees, it is important to then build the content and create an Instructional Design Strategy. There is a lot of research on how operator simulation has been proven very effective to improving employee skills, but for this particular study, there is no funding to pay for the cost of simulator creation. There is room, however, to make changes to the labor strategy. In order to most benefit operators with hands-on training, a Process Leader (an advanced machine operator) with vast technical knowledge of the systems, will be added to oversee the automated machines, and work one-on-one with operators as they troubleshoot on an as-needed basis. With this addition to the manufacturing floor, in conjunction with a Training Guide that focuses on retrieval techniques, operators will be able to retain more information that studying documents alone (Brown, 2014).

Implementing Process Improvement in Operator Skills

Once it has been determined which areas can be improved to maximize production output, an implementation strategy is necessary. One method is to identify tasks and knowledge an operator would need to be proficient at their job. To take it a step further, it is important to create a baseline for minimum expectations required to be proficient as an operator, and offer advanced skills as a way to become a higher tier operator with opportunities for more pay. This helps with employee engagement, but also directs a path forward for operators. "Employee engagement is one of the most crucial factors of any organization's performance as well as successful implementation of any new dynamic changes" (Weerasooriya, 2017, p. 34). Another area of process improvement pointed out by Weerasooriya (2017) is that "standard work of the employees should be improved and teamwork mind set should be developed among employees as well as [the] value of the business need (p. 35)." In order to implement changes, employees need to be engaged and understand their, not only the tasks at hand, but the importance of the tasks to the overall organization. It is not enough to simply know what to do, but *why* they do it.

Downtime Analysis

A downtime analysis of machines was taken using a sample spanning twelve days and across all four shifts. Scheduled maintenance downtime was removed from the findings in order to better calculate possible operator error contributions. Seven machines were used to calculate the largest downtime reasons. The findings are as follows:

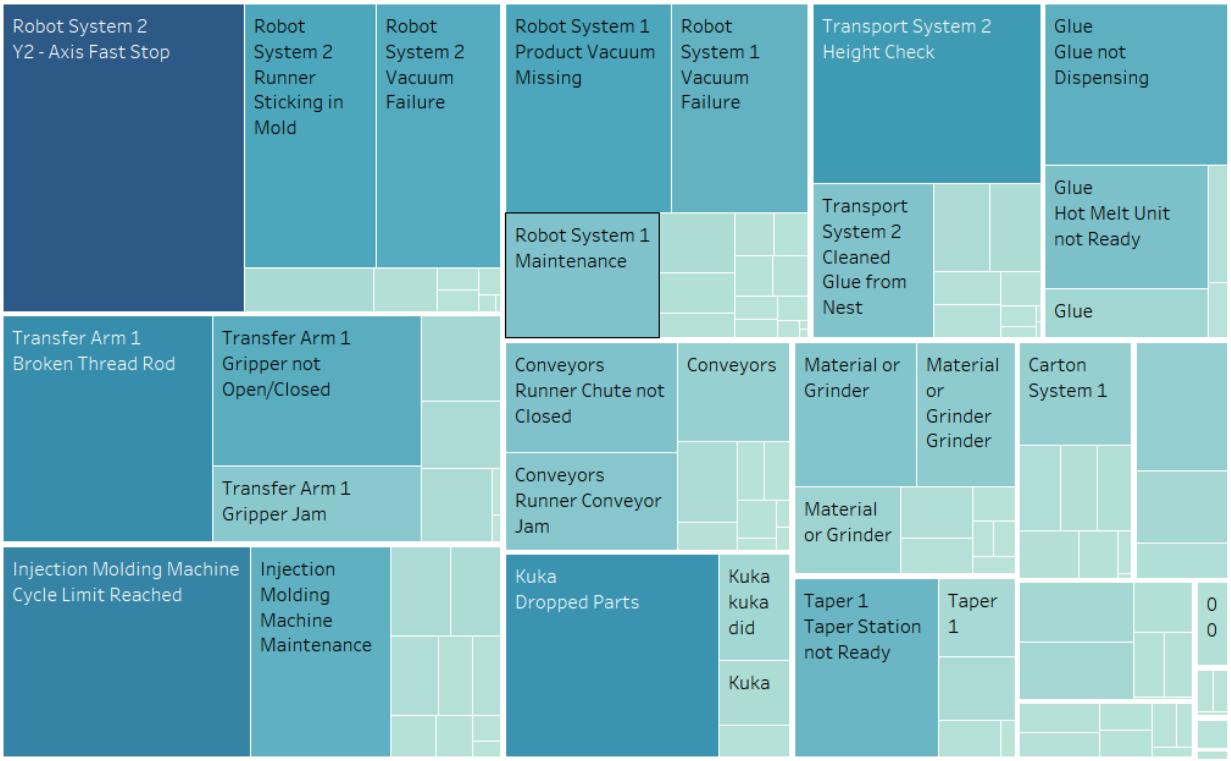


Figure 1: Total downtime of machines (minus maintenance)

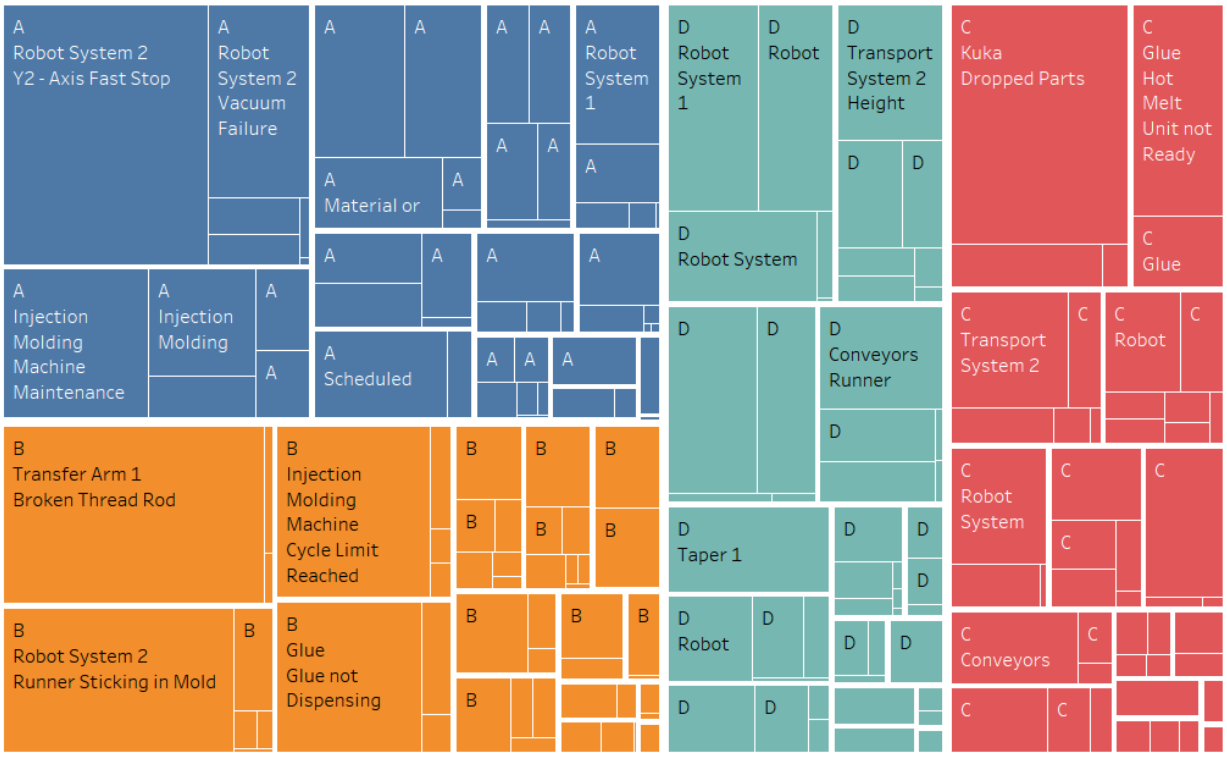


Figure 2: Total downtime of machines by crew

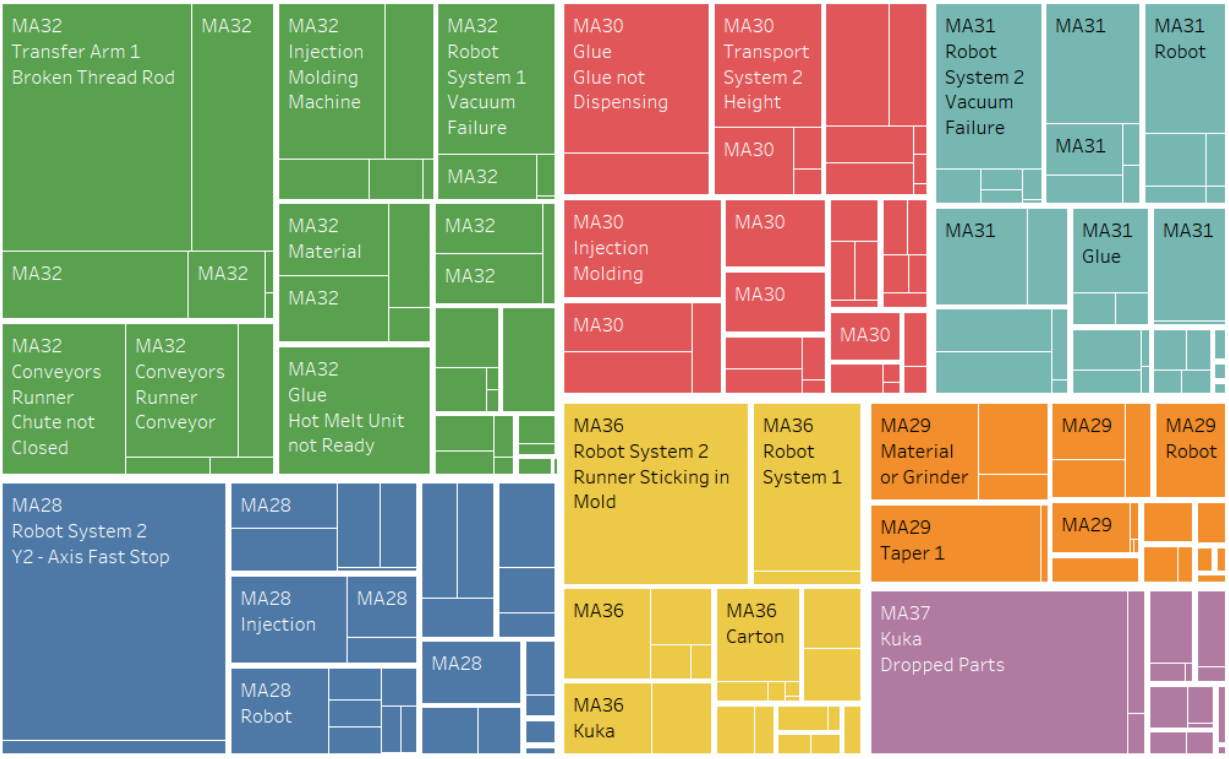


Figure 3: Total Downtime of machine by machine number

Interviews, Survey, and Observations

Surveys and interviews were conducted with operators, process leaders (advanced operators that oversee several machines), and their direct supervisors. Based on these, and observations taken over several hours from each crew, it became clear that employees are not being engaged as much as they would like to be. Half of the employees surveyed believed that the company was underutilizing their talents, interests, and abilities, and weren't as involved in

work decisions as they'd like to be.

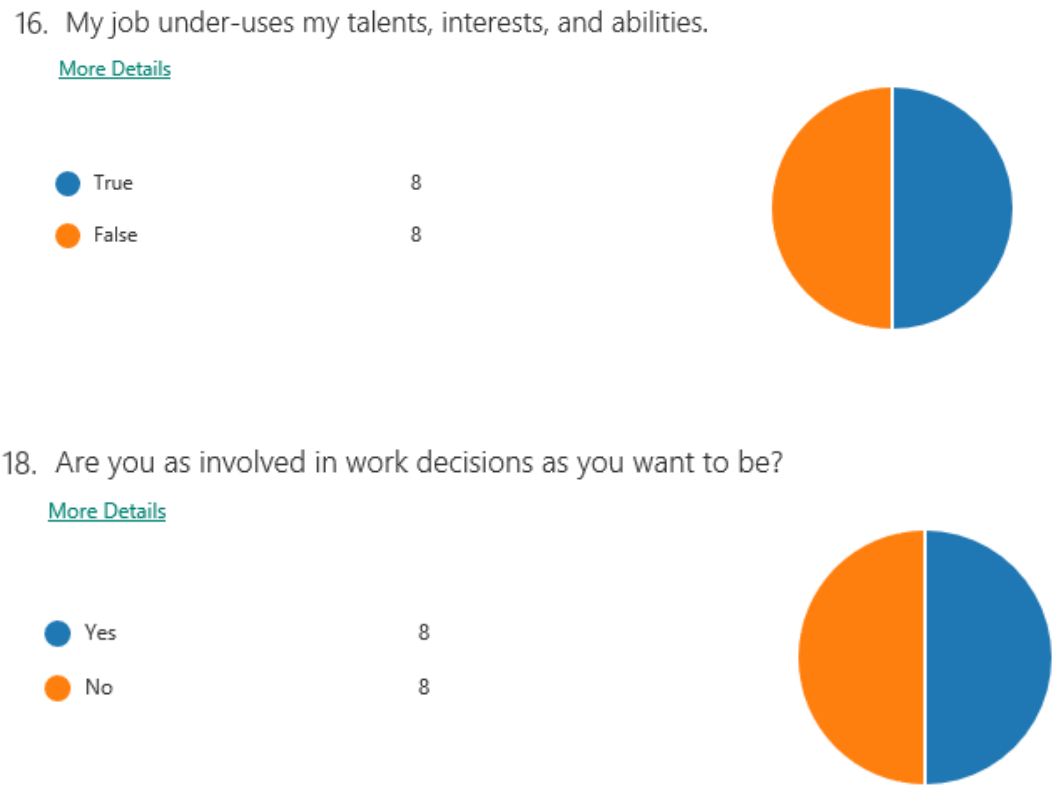
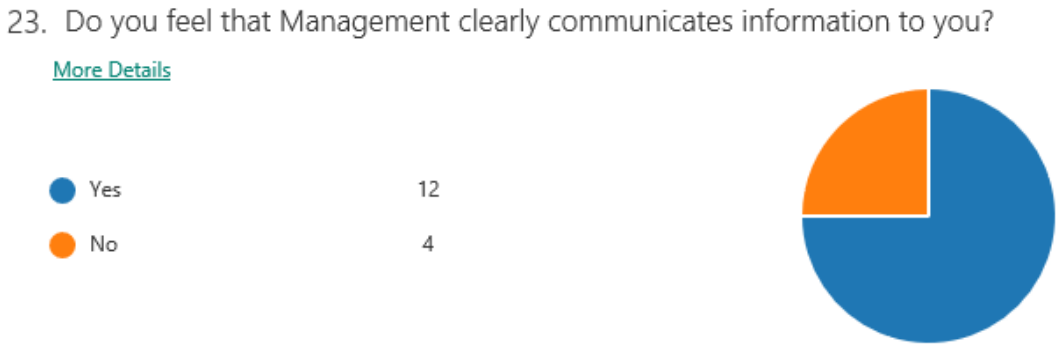


Figure 4: Survey results for questions 17 and 18

Other interesting findings from the survey revealed that some employees did not believe communication was effective either top to bottom or bottom to top.



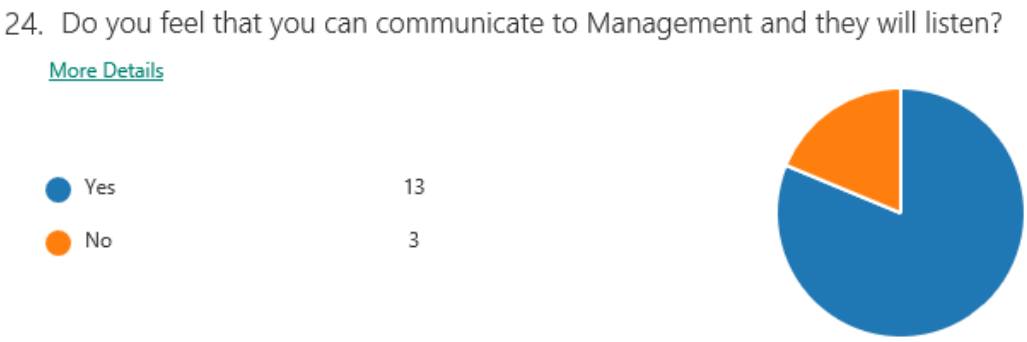


Figure 5: Survey results for questions 23 and 24

Interviews conducted showed a true desire to be more engaged in decision-making, but also have a clear guide as to whether they accomplished what they were supposed to for the day. One employee went on to say "It would be really cool if we get a big electronic screen on a wall that tells us how far we are from our goal. For example, our ultimate goal for the year is [x amount] cases. If we can gather the data to display the number of cases produced YTD (Year to date), we can have an idea of how well (or bad) we're doing overall. Also have it display theoretical values of how many cases should be produced for the day/week/month depending on how many machines are scheduled to run in that time period. Presently speaking, we have no idea whether or not we are doing well". This shows management negatively impacting employee engagement. Based on the interviews, it seems that employees are aware that positive changes are coming. Another employee said "I know speaking to [Plant Director] in a meeting a while back, she had a pretty good idea on a pay raise incentive when the operators or process leaders hit a milestone in their training, I thought that was a very strong idea and would boost morale among co-workers."

Analysis Report

Gap Analysis

Based on the needs assessment, it has been determined that there are three major gaps within the company: (1) utilizing data to move towards the largest bottlenecks, (2) under-engaged employees, and (3) troubleshooting skills among operators.

Data has not previously been used as a way to measure performance and understand maximum efficiency with the facility. Pulling together the data to take into consideration downtime of machines operators' work was tedious and difficult. There needs to be a way for seamless data compilation and extraction in order to 'work to the need.' By determining what areas are creating the largest amount of downtime, mechanics can fine-tune machines and trainers can fine-tune operator skills.

Employees seem to want to be engaged in the work, but there is a gap in communication and management's ability to utilize the operator's skills in such a way as to increase employee engagement. Employees also struggle to understand if what they did during their shift positively impacted the organizational goal. It is management's job to help define what a positive shift would look like to an individual operator based on cycle time and planned maintenance. An hourly rate of number of boxes would be an easy way to determine this. By calculating the amount of planned downtime and subtracting it from 12 (the number of hours in the shift), operators can multiple by the rate to determine if they met their goal for the day. Adding in a calculation to subtract for safety or quality incidents would also help steer employees into a direction that wasn't production first.

Finally, based on the downtime analysis over twelve days, it appears troubleshooting has become a necessity for operators to learn as far as skill development. The majority of

unscheduled downtime, across all crews and machines, is the ability to troubleshoot specific issues and get the machine up and running in a timely manner.

Design

Target Audience

The intended audience for this initiative is the operator that works on machines that are currently automated. These injection molding machines have automation attached to it that pulls the product out of the mold and stacks it into boxes.

Training Goals

Instructional Strategy

In order for Operators to meet the objectives, a restructure of the crewing on all shifts will be conducted to best utilize Subject Matter Experts, freeing them up to help coach more basic operators through troubleshooting incidents, particularly the ones in the performance objectives.

Instructional Design

There will be troubleshooting guides created through the use of Subject Matter Experts that will help new operators walk through the most common root causes and get to the problems faster.

A document will be laid out that helps create standard work for operators that helps them understand daily and hourly tasks, and gives them a clear process to help them when the machine goes down.

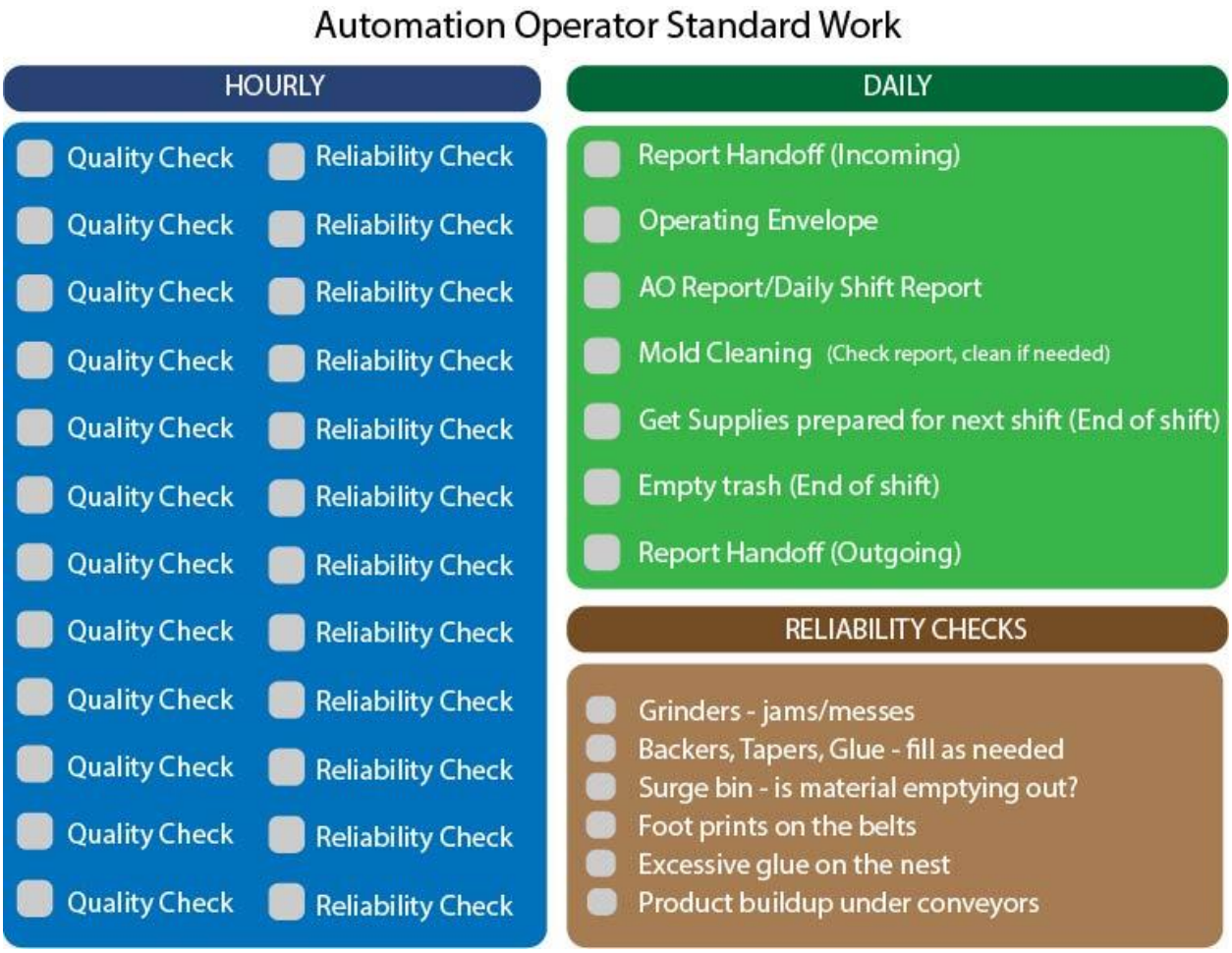


Figure 6: Standard Work Document (to be laminated and placed on equipment so they can check off tasks as they go throughout day)

Lesson 1: Basic Operator Standard Work

Module 1: Forms

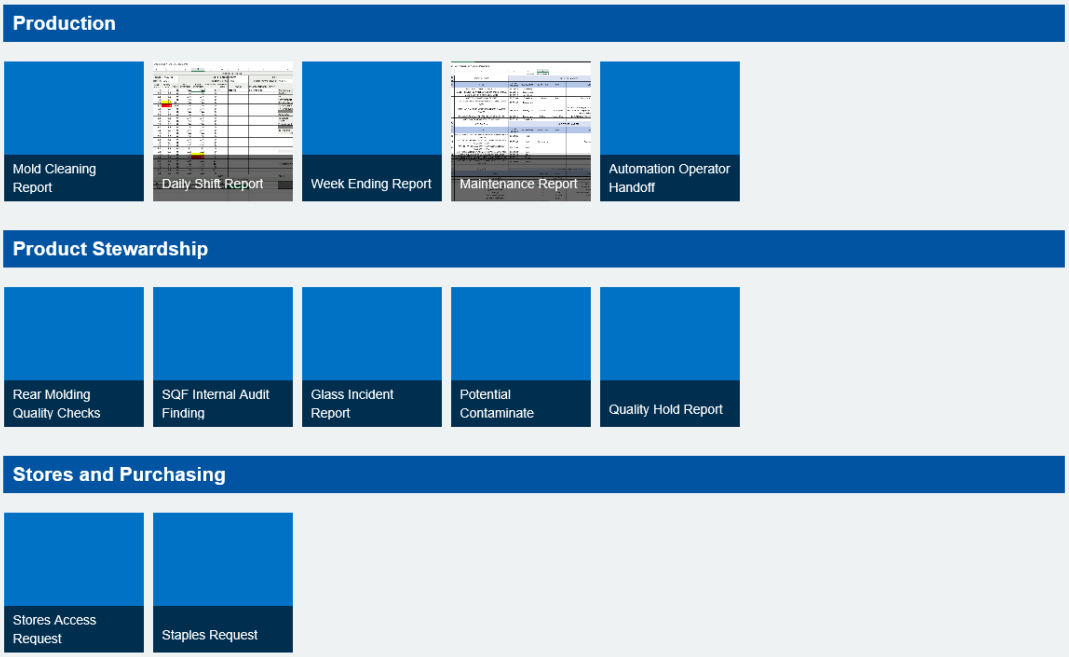


Figure 7: Forms Menu

Tools: Online Forms with easy navigation (see Figure 7)

Delivery Method: Computer-based

Module 2: Machine checks and observation

Tools: Agenda listing out how often to perform checks, and what to look for (see figure 3.1)

Delivery: Hands-on with Automation Trainer

Module 3: Quality Checks

Tools: Job Aid with pictures showing potential quality defects to look for

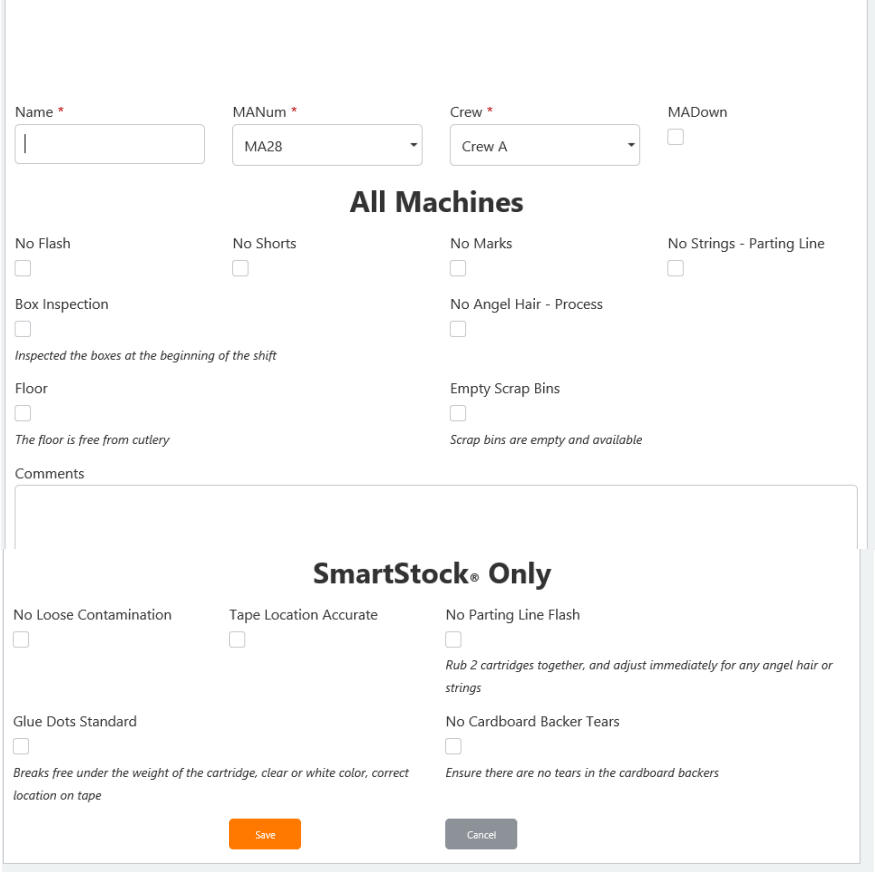


Figure 8: Quality Checklist

Figure 9: Quality Check Job Aid Sample

Delivery: Evaluation through regular checks of quality to determine if operator is finding quality defects prior to an entire pallet being completed.

Module 4: Operating Envelope Checks

Tools: An Operating Envelope that give parameters of their machine and limits to which certain areas of the machine should fall in

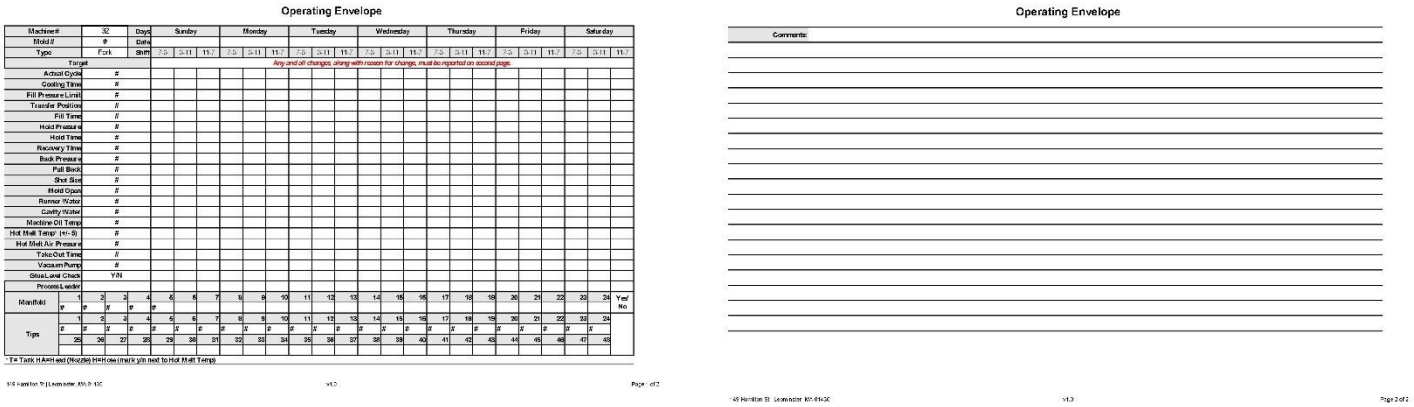
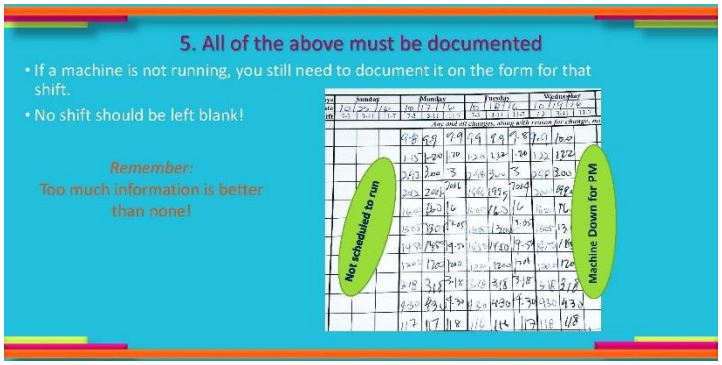
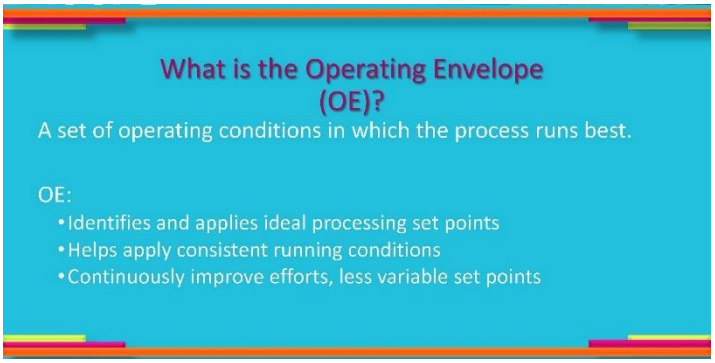
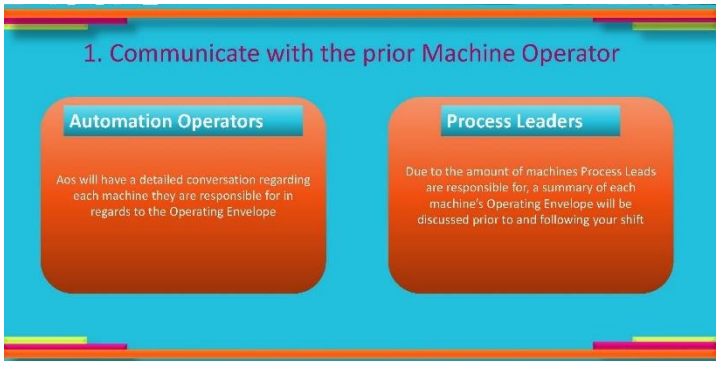


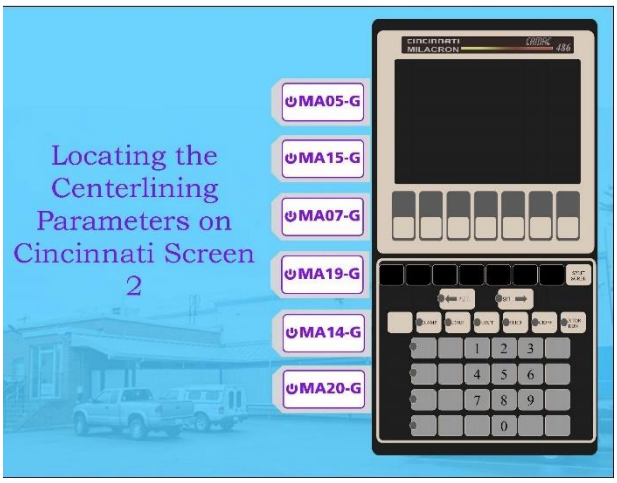
Figure 10: Operating Envelope Parameters (actual parameters were excluded from this sample)

Delivery: Job Aid showing how to find the different operating envelope parameters on the machine, and compare them to what they are supposed to fall in









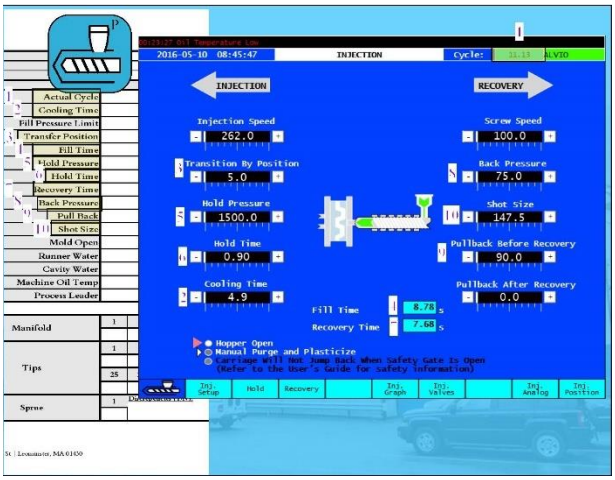


Figure 11: Sample of Operating Envelope Training

Module 5: The Troubleshooting Process

Tools: A standard procedure outlining what to do in the event the machine shuts down due to a mechanical problem.

Delivery: New Automation Trainer will walk-through hands-on to ensure that the operators understand the process and its importance

PURPOSE

The purpose of this document is to define the process for an Automation Operator once a problem with the machine is detected.

RESPONSIBILITY

This process is for the Automation Operator.

PROCEDURE

If an Automation Operator runs into a problem with a machine:

- AO will try to troubleshoot the issue
- If the issue cannot be resolved, AO will contact the rear molding room process leader
- If neither the operator or the process leader can find a solution, AO will write a work request
- If during maintenance hours (6am-3pm), AO will call Domingo (471743) to let him know there is a work request for the machine
    - If there is no answer, leave a message and call Gary Colecchi (471716)
- AO will inform supervisor, regardless of hours of operation, following a work request submission
- When maintenance arrives to make the repair, the AO and Process Lead will remain with the maintenance technician to support the repair and to learn.

Figure 12: Troubleshooting Process Document

Lesson 2: Troubleshooting

Module 1: Height Checks

Tools: a process flow outlining most-likely root causes and how to fix, to least likely root causes and how to fix, and a form that reacts to the answers to questions regarding the status of the machine based on the process flow.

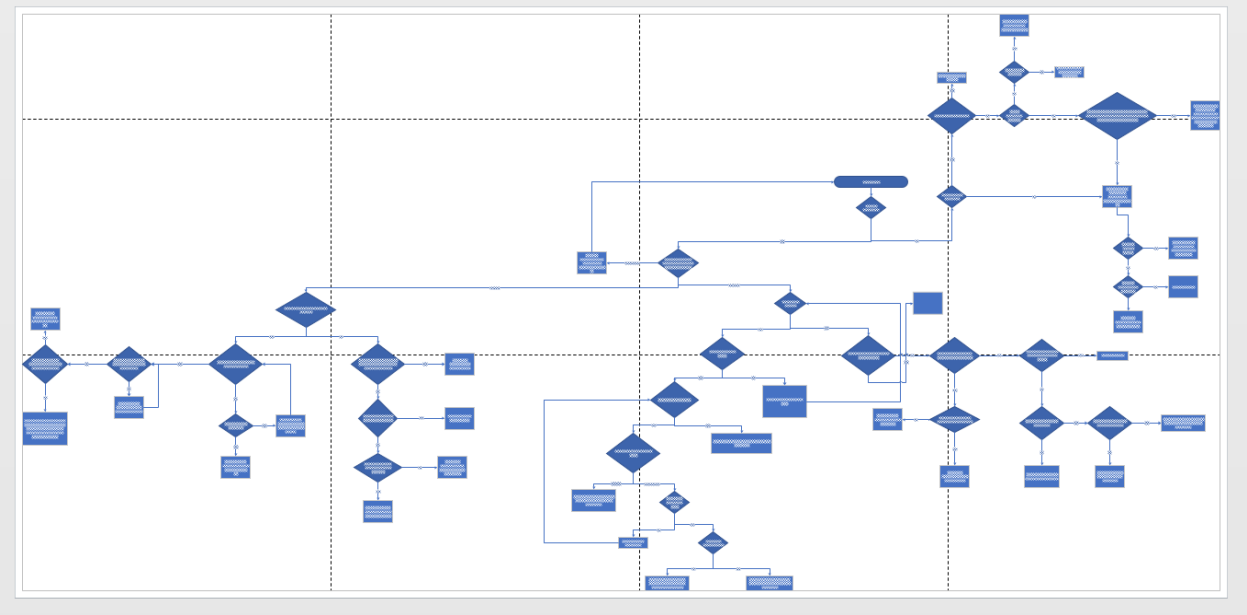


Figure 13: Process flow of troubleshooting possible causes

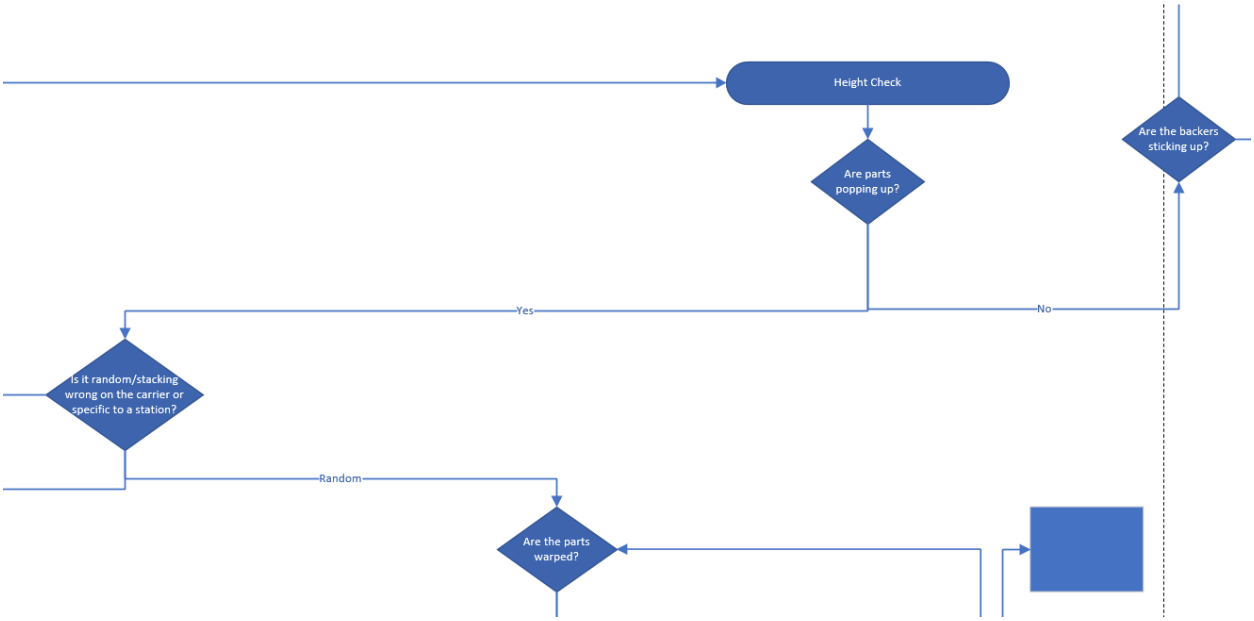


Figure 14: Zoomed in area of process flow

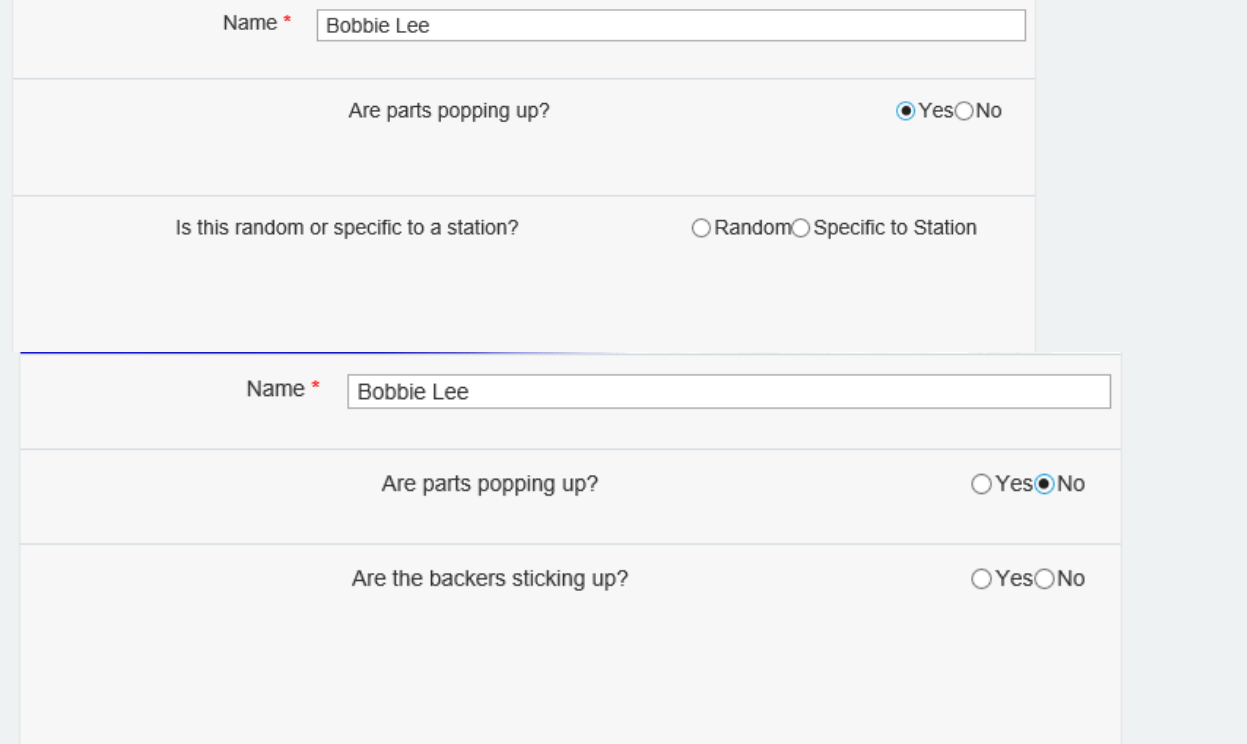


Figure 15: Form created based on process flow diagram as a tool for new operators to troubleshoot the issue. Questions change based on the answers given. All outcomes have a solution or move them to the Troubleshooting Escalation Process

Delivery: Hands-on training with Automation Trainer

Module 2: Troubleshooting Operating Envelope

Tools: a job aid outlining most-likely root causes and how to fix, to least likely root causes and how to fix

Add header

Operating Envelope Out of Range RCA			
Parameter	**Out of range**	**#**	**Causes/solutions**
Actual Cycle	Too high	1	Confirm process was not modified for combo or 10/100
	Out of range	1	Check other parameters
Cooling Time	Out of range	1	Adjust thermolaters back to recommended temperature
		2	Check mold temperature
		3	Check chiller temperature
		4	Confirm the material blend is correct
Eject Start	Out of range	1	Part/runner may be sticking to the mold
		2	Mold needs de-burring
Fill Time	Too High	1	Confirm correct velocity and temperatures
		2	Is injection speed according to setup sheet
		3	Is the high pressure limit according to setup sheet
		4	Has nozzle screen been checked
		5	Injection accumulator working properly (husky)
Hold Pressure	Out of range	1	Verify the pressure is working by increasing the hold time
Hydraulic Transfer Pressure	Too High	1	Parts/Plastic stuck in mold
		2	The injection velocity too high, decreased velocity
		3	Check the mold temperatures are set correctly
		4	Has nozzle screen been checked
Machine Oil Temp	Too High	1	Make sure oil coolant is on/ check tower temperature
		2	Check seals and for leaks
	Too low	1	Not enough time for machine to heat up
Mold Open	Out of range	1	Ejection problem, part/runner sticking to mold
		1	lubrication of tie bars

OE Out of Range | Quality Defects | Common Problems

Figure 16: Sample of troubleshooting job aid

Delivery: Hands-on training with Automation Trainer

Implementation Plan

A library with easily navigable documents will be created in Microsoft SharePoint. This library will allow for easy collaboration among the Subject Matter Experts.

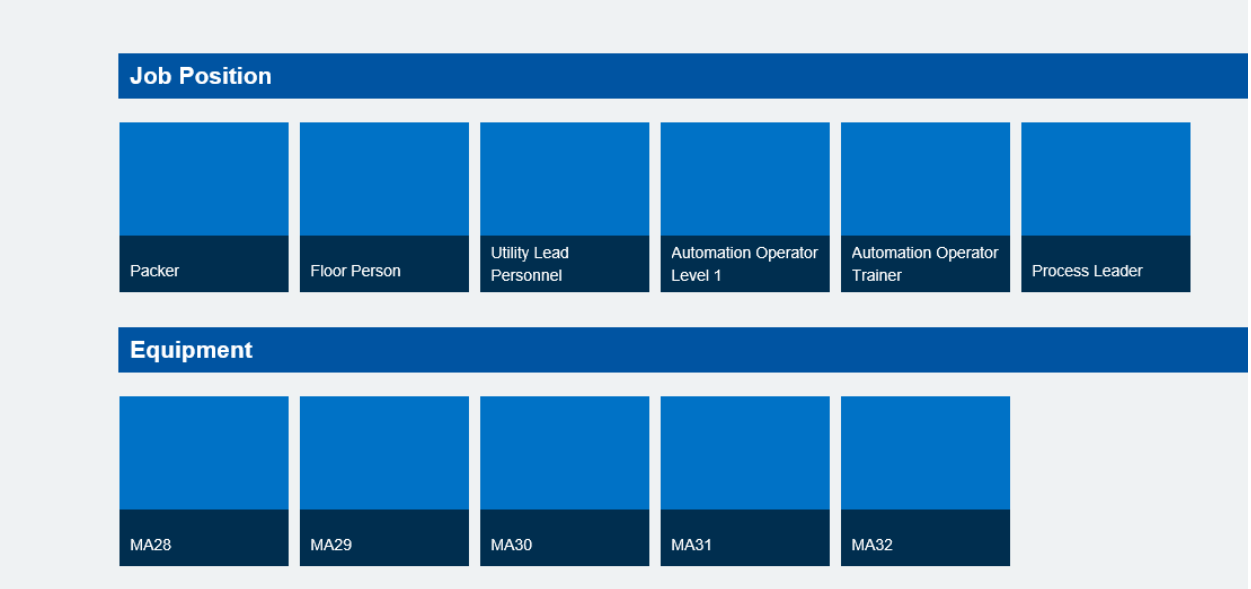


Figure 17: Sample of the SharePoint site

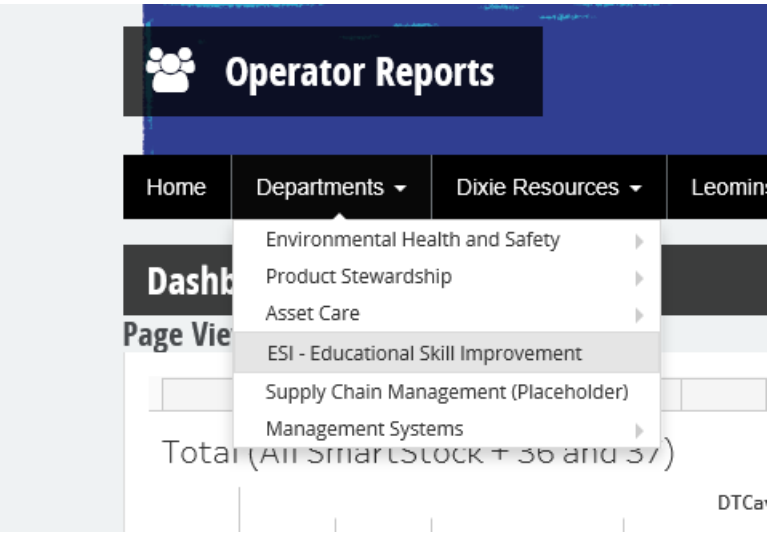


Figure 18: Menu to get to the library from main page

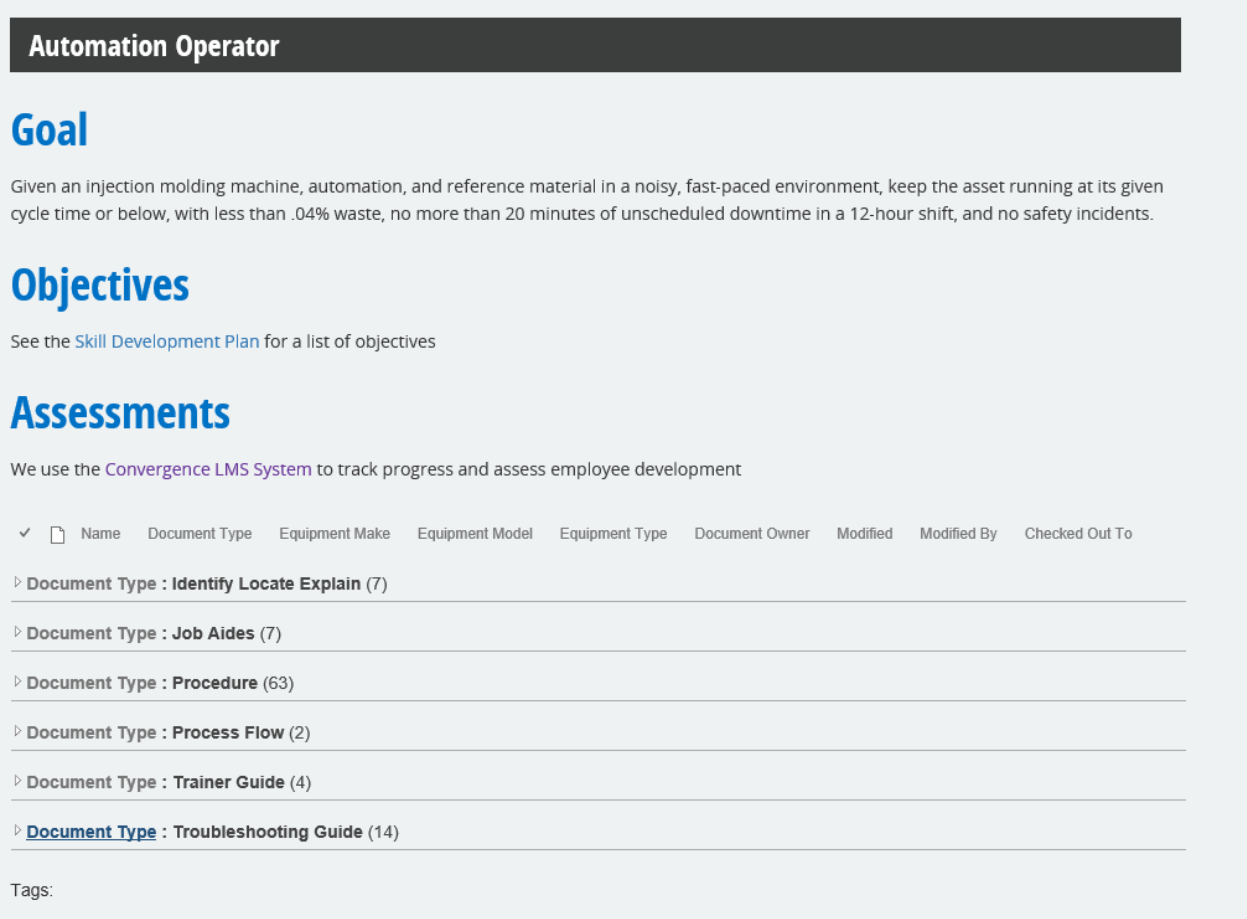


Figure 19: Operator Level 1 Menu sample

Operator Trainers will be given instructor-led training on how to navigate, and they will train operators on the job to follow processes and job aids from the library.

Evaluation Strategy

A level 1 evaluation strategy will be conducted to understand the reactions of operators to the new strategies and content. Observational analysis will be compared based on previous observational analysis pre-implementation.

A level 2 evaluation strategy will be conducted to determine what operators have retained. Through the initial downtime analysis, a future evaluation of downtime in a twelve-day

span across all shifts will help determine the effectiveness of the training as it pertains to learner retention.

A level 3 evaluation strategy will be conducted to understand the transfer in operator behavior. Repeating the survey and asking a few more questions related to the content implemented, an evaluation can be made in changes in overall attitude. Through direct observation of employees on the manufacturing floor, an analysis can be conducted based on observation pre-implementation.

A level 4 evaluation strategy will be conducted in order to determine the business results of the implementation of strategies in content. This will be similar to the level 2 evaluation strategy utilizing the downtime sample. Depending on the changes in downtime from the first sample to the second, it can be determined whether the organization benefitted from the implementation.

These four levels of evaluation are derived from Kirkpatrick (2006).

References

Antunes, R. M., Coito, F. V., & Duarte-Ramos, H. (2010). Human-machine control model approach to enhance operator skills. *2010 International Conference on Mechanical and Electrical Technology (ICMET 2010)*, (pp. 403-407).

Aqlan, F., & Al-Fandi, L. (2018). Prioritizing process improvement initiatives in manufacturing environments. *International Journal of Production Economics, 196*, 261-268.

Bin, M., Zhi-ying, G., & Hua-min, Z. (2006). Development of a plastic injection molding training system using Petri nets and virtual reality. *Journal of Zhejiang University SCIENCE A*, 302-308.

Bond, J. (2013, October). Operator training keeps small errors from piling up. *Modern Materials Handling*, p. 12.

Brown, P. C., Roediger III, H. L., & McDaniel, M. A. (2014). *Make it stick: the science of successful learning.* Cambridge, Massachusetts: The Belknap Press of Harvard University Press.

Colbert, E. M. (2012). *The impact of leadership on employee engagement at a chemical manufacturing company in the United States.* Ann Arbor: ProQuest LLC.

Fantini, P., Pinzone, M., & Taisch, M. (2018). Placing the operator at the centre of industry 4.0 design: modelling and assessing human activities within cyber-physical systems. *Computers & Industrial Engineering*, 1-11.

Fleming, J. (2009). From gallup: why engagement is essential. *Startegic Communication Management, 13*(4), 7-7.

Kirkpatrick, D., & Kirkpatrick, J. (2006). *Evaluating training programs: The four level (3rd ed.* San Francisco, CA: Berrett-Koehler.

Lockwood, N. R. (2006). Talent Management: Driver for organizational success. *HRMagazine*, 1-11.

Operator work design and robotics system performance: a serendipitious field study. (1992). *Journal of Applied Psychology, 77*(3), 353-362.

Pagell, M., & Barber, A. E. (n.d.). The strategic choice of operator skills in CNC installations. *New Technology, Work and Employment*, 65-83.

Pagell, M., & Vickery, S. (1999). Workforce skill choices and manufacturing environments: three case studies. *Mid-American Journal of Business, 13*(1), 21-29.

Rabbani, M., Akbari, E., & Dolatkhah, M. (2017). Manpower allocation in a cellular manufacturing system considering the impact of learning, training and combination of learning and training in operator skills. *Management Science Letters*, 9-22.

Ross, M. (2012). Five proven methods to boost operator competency with simulator training. *Trade Journals*, 1-6.

Vidal, M. (2007). Lean production, worker empowerment, and job satisfaction: a qualititative analysis and critique. *Critical Sociology 33*, 247-278.

Weerasooriya, N., & De Alwis, A. (2017). Impact of employee engagement on lean manufacturing: an empirical study in Sri Lanka. *FIIB Business Review, 6*(2), 33-42.

Appendix A: Survey and Interviews

Please leave any other comments here that you believe could improve your work environment.

1. n/a
2. It would be nice to have mini team meetings with the automation crew and their supervisors. Supervisors assign machines to people, discuss the status of the machines, or company news/changes or upcoming events, any questions or concerns can be brought up in the meeting as well. Establish goals for the day/week. Shouldn't take any longer than 10 minutes. I think it would be good idea but it would mean we'd have to come into work a bit earlier. But supervisors are already busy in the mornings with their meetings with the previous shift/process leads. Maybe we can join in with them?
3. Assistance packing when we're dealing with Shorts, Flash. Between packing and taking care of the equipment its hard to keep up especially on 12 hr shifts and the way we handle brakes on this situation kills us. :P
4. When we have brake time its hard to take care of two machines.
5. no comment.

Are there any ideas you have for improving the efficiency of the machines or your job?

8. Unfortunately I have no options for that, the machines are very complicated at first so I personally don't know what would improve their work
9. I think having packers on Smart stock machines would help this area so AO could focus more on troubleshooting any issues they may have with the machine instead of having to worry about keeping up with packing boxes.
10. I know it hard to find people for night crew, but more support on the night shifts would be greatly appreciated. I know you guys are working on getting mechanics for nights which would be a great help.
11. Let the computers keep track of more info, instead of writing info down that is already available each day.
12. look for advance method through research & there should be an skills training every year
13. MA32 & MA33 I feel are not worth running some of the time. We have goals that management would like us to reach but if these machines are constantly and consistently going down, that hampers us. Again, working with maintenance would definitely improve the efficiency of my job. I feel as though cross-training could be useful as well. I'd like to be able to be more self dependent. I'd like to have to go to my process leads less and write work requests less because I have the knowledge to perhaps fix it on my own.
14. having more people trained on more advanced process, mechanical, and automation concepts will provide us with more authorized maintainers to keep the machines running more consistently, for times when maintenance personnel are not around to assist.

Are there any ideas you have for improving the efficiency of the machines or your job?

1. New training for operators so that simple fixes that would otherwise require a WR and waiting for maint. to fix can be treated as an APM and minimize downtime
2. Can't really think of one at the moment. But I'll always be brainstorming.
3. Something like cancel carton when Y axis occurs it will save time and climbing.
4. Sorry I don't have one
5. Automation operators having more knowledge of the machines
6. try the best for the job.
7. more troubleshooting knowlege

List ways that might be useful to reward or recognize yourself and your peers for good performance.

8. advise them when they are making mistakes.
9. Pay increases, recognition or bonus
10. I know speaking to Cheryl in a meeting a while back, she had a pretty good idea on a pay raise incentive when the operators or process leaders hit a mile stone in their training, I thought that was a very strong idea and would boost morale among co-workers.
11. additional Personal or Vacation Hours, Bonus Money, Gift Certificates, Lunch
12. must be given time off with pay at least 2 dollars will be given as hourly rate increasepost his achievements
13. I think P-Pay is a good idea. Honestly, just to feel as if what I do is appreciated would be nice. I've been here for a year and a half and I'd just like to hear thank you every once in a while for running multiple machines while training, breaking everyone, etc.
14. p-pay is already a pretty good system, but it could be more effective if applied quarterly instead of annually

List ways that might be useful to reward or recognize yourself and your peers for good performance.

1. Setting production goals would be a good idea. Having a board with daily cases made per shift and if you hit the daily goal for the day you check off your name and the people who managed to constantly hit their goals by the end of the month could be rewarded with food or gp bucks to spend in the online store.
2. It would be really cool if we get a big electronic screen on a wall that tells us how far we are from our goal. For example, our ultimate goal for the year is 6.25 million cases. If we can gather the data to display the number of cases produced YTD (Year to date), we can have an idea of how well (or bad) we're doing overall. Also have it display theoretical values of how many cases should be produced for the day/week/month depending on how many machines are scheduled to run in that time period. Presently speaking we have no idea whether or not we are doing well. (Actually we can look at Lee-Anne Collechi's reports but not everybody has the time to do so. If we can use some of that data to display publicly, it can motivate us to work towards our set goals.)
3. Eat like the BossEmployee of the monthGift cardsChristmas partyBBQ ,a nice jacket will be nice, adding vacation hours, more money, Promotions
4. sorry no ideas.
5. integrity, hardwork and more troubleshooting knowlege are things i count necessary for good performance
6. monthly performance reviews where they're at and improving over short periods of time vs yearly performance reviews
7. Very small coupons. everyone loves coupons whether they are small or not. once in a blue moon though. I do still understand being rewarded in very much a removable option and good performance should be an automatic knowledge

How do you think we could improve our AO Training Program?

8. I don't know
9. Considering that I am a trainee, I see no issue with how teaching has gone so far. I've learned a lot in the past couple months with, or without understanding certain languages or tasks. so far I like how it all runs.
10. yes, need more training and make sure they understand
11. I think that we could improve the training by working more with the problem areas that AO deals with on a daily basis to get a better understanding on how to troubleshoot and make the proper adjustments to keep the machines running more efficiently. An few of these areas are Robot #2, lego grippers, foam grippers and tapers. I feel like these areas are where AO work most of the time.
12. I feel the night shift has not been getting the training opportunities the day shift has been offered. I know scheduling is harder but perhaps there could be some program for them , or even if they can come in for a few day shifts here and there.
13. More regular updates with training.
14. with the right candidate to be trained as well as the trainer must also be knowledgeable with the automation technology
15. We need a standard system of operating. Everyone has a different way to do things, some safer than others, some more efficient than others. Also, getting the trainers in with maintenance to expand their knowledge and skills. I've been waiting for that opportunity. I feel as though day shifts are in a better position than night shifts to learn new things. We don't have the benefit of maintenance. I've been spoken down to for doing something the way I was trained, and apparently it was not the correct way.
16. incorporate tests during training process to spotlight areas of training that need to be reviewed again.

How do you think we could improve our AO Training Program?

1. since not everyone learns at the same rate I believe after about a month of general training the AO should run the MA by his/herself with trainer shadowing and noting down what they need to work on, instead of going over topics the trainee can already handle they can focus on the individual aspect of the training that gives them issue.
2. We could improve the training by entirely skipping the need for new employees to shadow the process leads. As soon as they are hired they would need to be LOTO certified and then can immediately begin training with an A/O trainer. Process leads are very busy individuals and do a lot of extra work that is not necessary for the new trainees to observe. A/O trainers should be able to teach them the bare minimum required to effectively run the machines (we have not set a minimum standard yet).
3. By providing the necessary assistance wile in training, in my case some times, we had to leave the learning process to attend packing and it was hard to pick up.
4. By encourage the new operators not to be afraid to ask any of us to ask questions.
5. More training on actual mechanics of the machines
6. yes we should improve our AO training program.
7. our current program is quiet good

25. Would you be willing to help build the content necessary to help new Automation Operators learn faster?

More Details

23. Do you feel that Management clearly communicates information to you?

More Details

Yes	12
No	4

24. Do you feel that you can communicate to Management and they will listen?

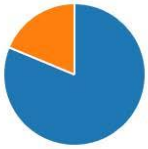
More Details

Yes	13
No	3

21. Does your job offer adequate challenges for you to develop new skills?

More Details

Yes	13
No	3



22. Are your performance reviews an accurate reflection of your performance?

More Details

Yes	15
No	1

19. Do you understand what is expected of you in your job position?

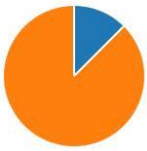
More Details

Yes	16
No	0

20. Do your colleagues care more about your line of work than you do?

More Details

Yes	2
No	14



17. On off days, do you get ideas for improving your effectiveness at work?

More Details

Yes	8
No	8

18. Are you as involved in work decisions as you want to be?

More Details

Yes	8
No	8

15. I believe I work in a safe work environment.

More Details

True	16
False	0

16. My job under-uses my talents, interests, and abilities.

More Details

True	8
False	8

13. People here work together to get work done.

More Details

True	16
False	0

14. The pace here is good for me.

More Details

True	16
Too fast	0
Too slow	0

11. The work I do is interesting and I enjoy it.

More Details

True	15
False	1

12. I like the benefits that come with this job

More Details

True	14
False	2

9. I back up my team members when they need help.

More Details

True	16
False	0

10. I share what I learn with team members.

More Details

True	16
False	0

7. I help turn team problems into opportunities.

More Details

True	15
False	1

8. I value the differences of viewpoint and varied experiences on our team

More Details

True	16
False	0

5. I bring my best skills and attitude to my team.

More Details

True	16
False	0

6. I expect only the best from members of my team, and they know it.

More Details

True	15
False	1

3. I understand what I need to do to advance my career at this Facility.

More Details

True	15
False	1

4. I urge team members to communicate clearly and honestly.

More Details

True	16
False	0

1. Crew

More Details

A	5
B	2
C	6
D	3
Other	0

2. Position

More Details

Automation Operator/AO Trai...	10
Process Leader	5
Shift/Department Leader	1
Other	0

Please leave any other comments here that you believe could improve your work environment.

6. i am happy wiith the work environment.
7. I have nothing to add
8. More training opportunities for the employees who want to take them. More general knowledge to operators and process leads about basic steps of the molding process would be helpful.
9. hire great team member improve communication
10. I feel as though management leaves us, the little people, in the dark a lot of the time. It would be nice to know what is going on in a place I spend the majority of my time. I see things happening that concern me or things I feel I could contribute to. I'm either afraid to ask questions because I've been ridiculed publicly in the past or I get non answers.
11. Duolingo is a good program, but a lot of the personnel here speak Cambodian or Vietnamese, which are not offered through Duolingo. Perhaps we could look into a program that includes more of the languages that we encounter here.

Appendix B: Automation Operator Report Sample