**Update Reports**

**Cell 90 Product and Shift Analysis**

Goal: Determine which products and shifts ran the best and worst for this YTD and from Apr-Jun

Actions/Results

* Used SAP to collect data for products and shifts
* Analyzed the best/worst products and shifts based on Total Square Yards Out/Hr and Waste/Hr
* Shift A had the highest output, which was double that of shifts B, C, and D.
	+ B, C, and D outputted close to each other
* Overall, the PE 600 products ran the best

Future Action

* Completed

**Sigma 21/22 Automatic Resin Design**

Goal: Determine the most efficient design for an automatic resin release system for Sigmas 21 and 22

Actions/Results

* Met with a K-tron sales rep to look at design of Sigma 21
* K-tron design for Sigma 22 is in the works
* The K-Tron sales representative finished the design and gave the budgetary quote
	+ It was quoted at $162,300.
* I have attached a picture of the design, it would use dilute method of transporting resin as air would suck the resin from the Supersack into the sigma in continuous movement
* Put together a document that details the current systems of Sig 21 and 22, the new proposed design from K-tron, and the benefits and drawbacks of all the current systems and the proposed system
* On the document, I put together some costs that we are trying to reduce and how the new system will help reduce or eliminate those costs
* The biggest areas where we could save is in buying supersacks compared to bags, savings by reducing inventory, and savings from worker’s compensation and injury reduction
* I scheduled a meeting with Ed and Matt to present what I have and move to either replace the system or improve the system
* Spoke with Kimberly Edwards from Welfare Dept. about the cost of work-related back injuries
	+ Average cost of back/shoulder injuries like one would see at the sigma range from $50,000-$150,000, with $85,000 being the average
* Phone call with Bruce Hafley, the K-tron sales rep. We talked about resizing the design in order that it could fit over Sigma 21
	+ Current design height of the receiver (the part that would be above the sigma) is 88”, we need it to be 74” or less
* Talked with Glenn Moore about the general costs to replace the hopper, valve, and pipe on Sigma 22 that is giving us the problems
* Reviewed presentation and added more material
* Presented my proposal to Ed and Matt on Tuesday
	+ Much of the feedback was just asking for more information
	+ I need to learn more about the controls
		- Can one person control it, what does the screen look like
	+ Can one super sack supply both bags? How big is the hopper?
	+ Installation costs
* I started to make a savings sheet
	+ $85,000 for workers comp
	+ $200,000 for labor savings (Reduce mixing by one operator per shift)
	+ I am still trying to figure out the numbers for inventory savings
* Installation costs: I talked with Bill Moore about contractor costs after I showed him my design, and he said he would get back with me
* Called the sales-rep from K-tron on Friday
	+ Setting up a meeting with the controls engineer to talk specifics about the control screen and its capabilities
	+ **I learned that one supersack cannot run both sigmas simultaneously**
		- As a result, we need to look into a double hoist set-up
	+ Gave Bruce more of our questions for him to answer
* Phone call with Bruce and Design Eng.
* I explained to him that we wanted 2 separate unloading and receiving systems for the resin
* Receiver is a little too large for the roof
	+ Considering options whether to cut a hole in the roof deck or make the receiver smaller (smaller receiver would still need to perform the same as the larger one)
* Miscommunication from K-tron: they are now working on the new design
* Finalized the savings pieces for the project
	+ Savings from materials will be around $11,000
* Following up with K-Tron to get the updated quote for the new design
* K-tron is finalizing the final quote for the project, it will be done next Tuesday
* Final Quote from K-tron
	+ $274,387 for systems servicing both Sigma 21 and 22
	+ Receiver will be able to fit under the roof
* Talked with Bill Moore about installation costs
	+ SWAG estimate for installation costs around $100,000 +/- 25%
* This would bring the total cost of the system and installation to be around $374,387
* Got this project idea on the Capital Project List for 2019

Future Actions:

* TBD: Capital Project Funding Pending

Troubles:

* The biggest trouble right now is the savings aspect. The calculation is not straightforward
	+ I have been talking with operators to see if we could switch from 17” spout bags to 30” spout bags
		- This would help our supplier of K100 resin, and potentially reduce their price of supersacks
	+ Another person I will communicate with is Kimberly Edwards about the average cost of a back strain to the company. We have a telephone meeting setup for next Tuesday
* I had a difficult time understand what some of Ed’s comments meant. As a result, I briefly caught up with him and asked more questions to get a better picture of what he said

**LVDT on Cal 22**

Goal: Reduce start up waste on Calendar 22 with more accurate positioning of the rolls

Actions/Results:

* Determined data taken from the last co-op needed to be updated
* Found that the current design of the LVDT sensors on Cal 22 rolls needed to be re-designed to make calibration easier and more consistent data
* Found the original designs for the LVDT sensor installation
* I completed 2 designs for the LVDT system. Matt and I looked over them, and decided on the one that would ideally want to install
* Proposed my design idea to two maintenance workers: Tom Crouch and Craig Thomas
	+ Craig said he was going to take a few days to think about it and how to adjust the LVDT sensors to help determine the starting roll gap
* Modelled my current design in Solidworks so that I could give people a real representation for how it might look
* Matt and I determined that a new design would not help with calibration, and we decided to move forward with the data taken from the last co-op
* Reset the LVDT sensors to 650 on a 9 mil product as our “calibration”

Trouble:

* We ran into trouble trying to determine how to calibrate the rolls. There did not seem to be an easy way for us to calibrate the LVDT sensors with the design we chose, or for any design.
* The design process was a discouraging. It turned out that we wasted a few weeks trying to come up with a design when we could have just moved ahead with data we already had
* On the flip side, going through the design process told us that a new design would not be reasonable and prompted us to use the data
* Tom set up tag in the historian to collect LVDT data

**Optimization of Line-speeds to help Reduce the amount of No-adhesive Downtime on Cals**

Goal: Determine and implement a procedure for the optimal line speed for both Calendars

Actions/Results

* Sheet was placed out this week for operators to record downtime and reasons for downtime for PE 745
* Data collected for the past year on PE 745 actual waste compared to STD waste
* Recording each step of the adhesive-making process from Banbury into the Happy Box to find the most efficient time for production
* Over the course of the week, I have been collecting time data pertaining to the adhesive making process from the Banbury through the Sigmas
* Using the MRRs, I have measured the Banbury Mix time (from start to transporting to the sigma) and the Sigma mix time (from conveyor to extrusion into the Happy Box)
* With this data, I calculated the target line-speed for each product
* I collected the sheet I put out this week recording downtime and waste. All the reasons were that the Calendar ran out of adhesive. This project ties closely with reducing no adhesive downtime
* Created a formula to determine the line-speeds when certain products are running together that are both using Banbury-Sigma
* I determined the optimal adhesive output from the sigma based on total Banbury and total sigma mixing times, and from there used the target adhesive thickness and target adhesive weight to calculate the line-speed
* I created a calculator that shows what the line-speeds should be on the calendars when we run Banbury/Sigma on one or both calendars
	+ From this calculator, I created a comprehensive chart that detailed what speed each calendar should run for every combination of products
	+ I looked at the variances in the line-speeds to find the average value, max speed, and min speed. From these values I calculated a tolerance for each product
* I also created target calculations for the fastest each product should run if they were the only product on the Banbury. I included how my calculations differed from the current MRR speeds
* I also gave each product a rating, either excellent, good, moderate, or bad, that depended on each’s optimal line-speed. The picture is below
* Met with Matt, and we discussed the spreadsheet that I sent over to him last week
* We talked about updating the MRRs, and having a discussion with plant management and scheduling
* Met with Ed and Deborah on Monday to discuss my findings
* Updated my Line-speed spreadsheet to show what the speed each calender should be if they were on the SMT
* Found out that shop floor operators could have access to spreadsheets, so I have been working on my spreadsheet to make it more operator friendly and usable
	+ This as included making a drawing of each calender and then displaying the linespeed to run
	+ I contacted Wendy Wagner to determine how to give the shop floor access to spreadsheets, and I am waiting to hear back from her
* Zputnew and t-Rex optimization chart update
	+ I am continuing to collect data regarding how our T-rex runs are going and how much waste we are generating
* Working on a Master MRR for both Calenders
* Finalized the spreadsheet that operators would use on the shop floor
* Talking with Ka Lee and the IT department about getting the calendering shop floor PCs access to spreadsheets
	+ The plan is to either customize the computers so that they have access, or upload them to Shurnet (if this option can actually work)
* Looking at the savings piece from reducing downtime
	+ Gathered data for all the no adhesive downtime for both calenders
	+ Determining the cost of minutes of downtime and the start-up waste from the amount of times down
* PE 745MSL: Put out a downtime sheet for operators at Cal 22 to record the reason for times PE 745MSL will be down this weekend
* Continuing the conversation with Ka Lee from the IT department about adding spreadsheets to the shop floor
	+ I have sent correct versions of the spreadsheets we want operators to access
	+ IT is uploading the documents to Shurnet, then they will install excel on the calendering computers so that operators have access
* Spreadsheets work on the computers
* Finish spreadsheet installation
* Monitor T-Rex tape over the next 2 months to see if trend of Percent of Standard over 100% continues

Troubles:

* I ran into trouble yesterday with my line-speed calculation. I realized I was missing an important component, the adhesive width, which was throwing off my units. I corrected this mistake and was able to complete the calculation successfully
* The whole calculation caused me trouble. It was difficult for to think of the correct way to represent both sigmas using the Banbury at the same time, but after thinking, I determined the solution

**Training/Audit for Mixing**

Goal: Monitor and Re-train mixing operators

Actions/Results:

* Mixing operators have slacked in following the MRRs. Quality of compounds and adhesives has dropped
* As I have been collecting time data, I have been monitoring the operators for mixing and have determined that they are not following the MRRs
* As a result, I have begun to audit the operators.
* I have started a new training program that will include a quiz, and possibly a video tutorial that will re-train the operators
* As I mentioned before, this week I did some night shift hours
* I audited the Banbury and the Sigma operators by seeing if they followed the MRR, if they left their post, etc., overall just seeing how they did their job
* I also went through the Apr-June MRR batch sheets that the Banbury and Sigma operators filled out
* Made an operators quiz for mixing operators
* Created a training presentation with video and picture examples, and finalized the quiz
* Looking at the current Mixing Training checklist to see if anything needs/should be updated
* Talked with Ron Coffey about how he currently trains Mixing Operators
	+ Saw on Shurnet how he assigns training and JSA quizzes
* Talked with Billy about adding quizzes/JSA quizzes to Shurnet
* Emailed Lisa Brown about adding quizzes and training to the JSAs for mixing operators
* I had a phone call with Lisa Brown, and we met in person when she was at Stony Point to talk about the quizzes
* Quiz details
	+ Question bank of 21 questions
	+ Quizzes will be 10 questions each, 8 to pass
	+ 45 min time limit
	+ One month to take quiz when assigned
	+ Take quiz once per year

**Load Cell Roller on Calendar 22**

Goal: Determine why the Cool Can Tension reader is not working and implement a solution

Actions/Results

* I talked with a sales representative form FMS, the maker of the load cell roller about potential problems with our set-up. He asked for more information about our machine system
* Gathering information for FMS about the load cell roller such has roll diameter, line-speed, minimum tension
* FMS will look how we are using our force sensors and help determine a solution

Trouble:

* I am having trouble finding two necessary pieces of information: the weight of the roller and the bearings on the roller
* I have talked with Glenn Moore and looked through Matt Moore’s old documents both online and paper but could not find any record of these pieces
* Confusion about how the load cell rollers work
	+ I am reading more about them and plan on talking to the sales rep so that I can learn more about their functionality and intended purposes

**Mooney Room Board Update**

Goal: Organize the Mooney Room board to help the operators find what they need faster

Actions/Results

* Created a model of the board and got the approval of A,B, and D shifts
	+ I didn’t see C shift, but I figured if the other 3 liked it, C shift would too
* Put up better labels and separated each section, Rubber Info, S4 Audits, NSOPs, and Problems/Requests, so that the operators can see each category easier
* Here is a picture of the updated board!

**Calendar 21 Splice Procedure Update**

Goal: Update Cal 21 Poly Splice Procedure for EZ Glide Products

Actions/Results:

* I printed out the procedure, and talked with the operator Chris Hostler about what he did to change the Poly Splice Procedure
* We updated the procedure to say we need 5 strips of double faced tape when making a poly splice on EZ Glide products
* Working with Chris Hosler to re-training Cal 21 operators how to do EZG Poly Splices
	+ Chris is training shifts A and C
	+ I am training shifts B and D
* Chris completely trained A shift, and there is one person left to train on B, C, and D shifts
* Note: I found that operators were willing to listen to my instructions and that I was well received
* Finished training B and D shifts
* Looking at Cal 21 Downtime, seeing how much we are saving from the new procedure over July
* I looked at the downtime report for the month of July to check if the updated poly splice procedure has made an impact
* In this month, we saved $12,000 due to less downtime and startup waste when the procedure was updated
	+ Assuming constant downtime and production, this amounts to $144,000 of savings over the course of a year
	+ It should be noted that the procedure only updated EZG products, so I will be having a conversation with Matt and asking how I can differentiate between EZG and regular poly products
* **Completed July 30th**

**Rubber Plantation Tracking**

Goal: Find an easier way to track rubber based on plantation codes and not country codes

Actions/Results:

* Talked to the people from IT and communicated what fields we wanted and where we wanted them to be
* IT is looking into the request to see if they can add the fields, “Plantation Code” and “Mix Time” to the “Time Ticket for Production Order” page on SAP
	+ Since this is a more sophisticated request, they may need someone with more clearance, such as Matt Baker, to put in the IT request in the future
* Reached out to IT and received a response
* Changing an SAP standard screen is more complicated, and it would require a BSR approval
* Wrote procedure for Banbury, updated procedure for calendaring batch confirmation and updated log roll sheet
* This week, I have been training operators to record the rubber *plantation code*, not the country code
* I have instructed the operators to use the guide that I created to match the picture on the guide to the correct plantation code
* This is being done for quality purposes: finding the best rubbers
* I have been monitoring the ZBLT report and the batch tickets the operators are printing, and I am seeing a gradual shift to incorporate the new codes
* Feedback from operators has been mixed, but they have accepted the change
* Finished training D shift
* **Completed July 30th**

Troubles:

* When we first started dialogue a few weeks ago, there was a lot of confusion between myself and IT
* I did not communicate to them clearly what we wanted, and as a result they misunderstood me and could not complete my request
* In the end, it was most beneficial to do a WebEx meeting and for me to share my screen so that the IT department could see exactly where I wanted to put the new fields

**Re-organizing the Color Poly Room**

Goal: Re-organize the poly room to maximize efficiencies of transporting and using Poly

Actions/Results

* Created a layout of the Poly Room that I will use as a base to organize it
	+ Mapped out the available spaces, the constraints, the sizes of the palettes, and size of the forklift that would need to access the poly
* Looking at data for poly that we have now
* Beginning to put different polys in spots
* Talked to Rich about setting up a Kaizan project with the goal to re-organize the poly room
* Talked with Ron Coffey to determine which operators would be best to participate in this project
	+ Putting out a sheet to ask for volunteers, and I will choose from that list
* Set up meetings with operators to discuss solutions to the problem
	+ Meetings will be on Monday (A and D shifts) and Weds (B and C shifts) at 6:30
* Created a presentation to use at the meeting
* 2 Kaizen planning meetings this week
	+ Monday (A and D shifts, and receiving)
	+ Weds (B and C shifts,  and receiving)
* The solution we came up with is a blend of both meetings
	+ There will be 4 sections: poly in the crates, 3.5, 2.5, and a 2.25
	+ Poly will be organized in each respective section by the speed at which it is used
		- We determined speed by looking at the highest frequency of orders in the last 6 months
		- There will also be an overflow area in each section where new shipments of poly will be placed and then cycled through with the older poly
	+ Diagrammed the room out to account for each section
	+ In the back, there will be a singles section where old and used poly will be placed
* On Monday, Walter Winters, Lonzie Locklear, Chris Hosler, Ricky Dalton, and I reorganized the color poly room
* We designated 4 areas: areas for 3.5, 2.25, 2.5, and lying down poly
	+ We organized each area based on the speed at which the poly is used
* We started a 7 in the morning, and re-organizing was done at 1:45
	+ We spent the next hour putting up signs for each location
* To keep it clean, I talked to operators from A and B shifts, and asked that they tell the night shift operators
* I am working on a checklist for supervisors to conduct in the morning so that operators are held accountable for any disorganization in the color poly room
* Each day, I have been monitoring the color poly room and checking to see that it is continued to be maintained
	+ On Tuesday, there were palettes and trash that we placed there, but after an email to the supervisors, this issue was resolved
* **Completed July 23rd**

Troubles:

* I did not understand what a Kaizan project was, so I did research and talked to Rich

**Banbury Batch Temperature Monitor**

Goal: Re-calibrate the temperature reading on the Banbury screen so that Operators can accurately measure the temperature of compound batches

Actions/Results:

* The temperature reading on the Banbury Screen is wrong
* I am recording the temperature on the Banbury screen, and then using a temperature gauge to measure the temperature of the batches that were dropped
	+ I stick a metal rod into the compound and it reads a temperature
* Continued to collect data to see the difference between the screen temperature and the dropped temperature
	+ I am only collecting data during A shift because the operators are better
* **Writing a procedure for the operators to check the dropped batch temperature when they check the Mooney viscosity**
	+ I also updated the Mooney batch sheet so that operators could add in the dropped temperature
* Talked to Tom Crouch to reset the Banbury Screen Temperature reading down 46 degrees
* I took more data after Tom reset the Banbury screen temperature, and the dropped temp on the screen matched what I got with the handheld temperature probe
* Finished writing the procedure for mixing operators to check the temperature of the dropped batches
* This week, I have been training operators to measure the temperature of the dropped batches when they record the Mooney value
	+ I have completed training for A, B, and C shifts
* We are doing this as another quality check for the compound
	+ We want to make sure the Banbury screen is correct, and if it is not, to recalibrate the screen so that it accurately measures the temperature
* Feedback from operators has been mixed, but they have accepted the change
* Finished training D shift
* Completed July 30th

**Improving PC 618 Adhesion**

Goal: Improve the PC 618 adhesion to the poly, particularly to the ends of the roll

Actions/Results:

* Looking at the middle roll surface temperature
	+ Taking measurements and updating the procedure for measuring the surface temperature of the middle roll
	+ Comparing Left, center, and right parts of the roll
	+ Comparing surface temperature with the handheld sensor to the infrared gun
* On Tuesday, I looked at the chiller data to see if there were any variances since June of last year
	+ Trying to determine if any of these variances were a factor in the picking problem that we see with PC 618
	+ I found several gauges that showed major change over the course of the last year
		- Additionally, the chiller data did not seem to be well recorded
* I also updated the procedure for measuring the middle roll temperature
	+ Changed the pyrometer from the flat device to the grooved device after taking data and seeing the great fluctuation in the flat device

**Flag Tracking Errors on Burl Rolls**

Goal: Update the flag tracking procedure so that cutting out waste in the middle of the roll can be more efficient in finishing

* Updated the flag tracking procedure for calendering and finishing
* Included diagrams with zones for orange flags (dryness)
	+ Three zones corresponding to three areas in the tape
	+ This method is to help finishing identify imperfections in the tape so that they can scrap those rolls and work more efficiently
* Overall, this should improve the communication between calendering and finishing
* **An example is below**
* Updated the procedure for orange flag tracking
	+ Divided the webs for calendering and finishing into 3 zones
	+ When a dry occurs, operator will write down which zone the dry happens to help with identification of the dry on a later date
* Created both a picture guide and visual markers to assist operators
	+ Below is one example of the picture guide
* Re-training calendering operators
* Jim Travis is having a Yellow-Belt conduct the training in the finishing department



Future Actions

* **Completed August 3rd**