Measuring Your Production: Get the Most out of Your Metrics

Chad Pagels, Zeeland Truss and Components
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Measuring Your Production: Get the Most out of Your Metrics

Ben Pagel, Network Manger, BEP/Lyman – ABC Truss

Chad Pagels, General Manager, Zeeland Truss and Components

Summary

☞ Using data metrics to get the most out of your:
- Equipment
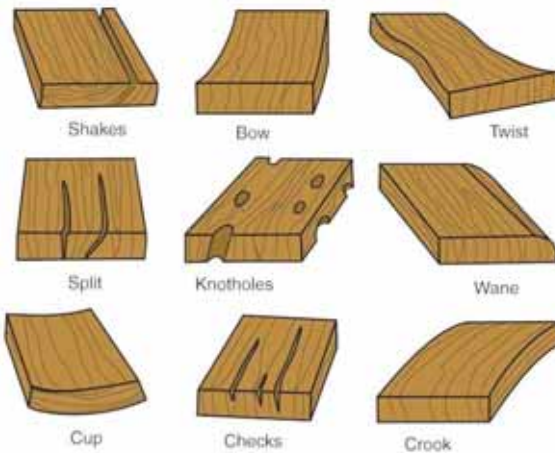- Materials
- Workforce
- Throughput

Equipment

Equipment

	Station	BDFT	Time Clock Hrs	Logged Hrs
Shift: 1	ALS		0	13.98
	HP1		0	15.77
	HP2		0	7.77
	Maximizer		0	10.19
	Spida1		0	7.71
Shift: 2	ALS		0	3.27
	HP1		0	7.76
	HP2		0	11.49
	HP3			0
	Maximizer		0	0
	Spida1		0	7.84
Shift: 3	ALS		0	5.91
	HP1		0	15.6
	HP2		0	15.84
	HP3		0	108.63
	Maximizer		0	54.05
	Spida1		0	7.98
	Spida2		0	1.8
			0	295.6

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Equipment

Start	Date	1/1/2019	Get Data		Clear Results		Compare Data		2x4	0.2916				Refreshing Completed: 6/21/2019 8:04:25 AM					Records that Match:		2963
End	Date	6/20/2019							2x6	0.4583									Average Build Time (Min Per Man):		2.588
Start	Span	20							2x8	0.6042									Average Piece per Min.:		0.107
End	Span	28							2x10	0.7708									Average Joints Per Min.:		0.107
Start	TCSize	0.12							4x2	0.125									Average BDFtPer Min.:		0.0411
End	TCSize	0.2								TC/BC Size - on this report first piece starting from the left									Average LinFtPer Min.:		0.1084
																			Total records found:		3745

Job	Batch	Truss	TCPitch	BCPitch	TCSize	BCSize	OHL	OHR	HeelL	HeelR	Plies	Span	Emp#	Qty	BuildHrs	Build Date/Time	Station	Jts/Trs	Pcs/trs	BdFt/Trs	Min/Man	Pcs/MM	Jts/MM	BdFt/MM	LinFt/MM
T93382F	3382-7P1	FF	0	0	0.125	0.125	0.000	0.000	1.500	1.500	1.0000	26.92	4	3	0.553	6/19/19 7:01	02 Floor	24	25	71.500	2.767	0.111	0.115	0.0387	0.1028
T93382F	3382-7P1	FF1	0	0	0.125	0.125	0.000	0.000	0.896	1.500	1.0000	26.92	4	3	0.553	6/19/19 7:01	02 Floor	23	27	75.000	2.767	0.102	0.120	0.0369	0.1028
T93382F	3382-7P2	FD	0	0	0.125	0.125	0.000	0.000	1.500	0.563	1.0000	20.71	4	2	0.267	6/19/19 7:35	02 Floor	19	22	56.167	2.000	0.091	0.105	0.0356	0.0966
T93382F	3382-7P2	FC	0	0	0.125	0.125	0.000	0.000	1.500	0.563	1.0000	21.60	4	2	0.267	6/19/19 7:35	02 Floor	19	23	57.500	2.000	0.087	0.105	0.0348	0.0926
T93382F	3382-7P2	F	0	0	0.125	0.125	0.000	0.000	1.500	1.500	1.0000	23.92	4	1	0.133	6/19/19 7:35	02 Floor	42	26	57.667	2.000	0.077	0.048	0.0347	0.0836
T93382F	3382-7P2	FA	0	0	0.125	0.125	0.000	0.000	1.500	1.500	1.0000	23.92	4	6	0.800	6/19/19 7:35	02 Floor	23	24	63.000	2.000	0.083	0.087	0.0317	0.0836
T93382F	3382-7P2	FA1	0	0	0.125	0.125	0.000	0.000	0.896	1.500	1.0000	23.92	4	6	0.800	6/19/19 7:35	02 Floor	22	26	65.833	2.000	0.077	0.091	0.0304	0.0836

Materials

Materials

Mill #	Length '	# Pieces	# Culled	Cull Factor
	TOTALS	23814	1228	5.2%
44	8	294	5	1.7%
66	10	294	10	3.4%
44	12	294	15	5.1%
66	14	294	15	5.1%
66	10	294	10	3.4%
101	8	294	8	2.7%
44	8	294	5	1.7%
44	8	294	5	1.7%
101	10	294	10	3.4%
44	12	294	22	7.5%
66	14	294	36	12.2%
66	10	294	12	4.1%
66	10	294	5	1.7%
101	8	294	2	0.7%
44	8	294	7	2.4%
101	10	294	23	7.8%
44	12	294	22	7.5%
66	14	294	22	7.5%
66	10	294	18	6.1%
66	10	294	11	3.7%
101	8	294	3	1.0%
44	8	294	3	1.0%

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Workforce

➤ Challenge: Seasonality hit, order file increased

➤ Needed to increase production

➤ How do you do this without metrics?
- Increasing hours
- Increasing overtime
- Add equipment

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1st Shift

Dollars						$0	$
Board Feet	14,323	14,616	14,202	15,953	-		59,092
Hours	62	60	54	85	-		261
Bd Ft. Per	231	244	263	188	-		226
$ per Direct						$ -	$

2nd Shift

Dollars					$ -		$
Board Feet	6,261	9,881	7,292	8,717	-		32,151
Hours	65	62	52	54	-		233
Bd Ft. Per	96	159	140	161	-		138
$ per Direct					$ -		$

☞ One of these numbers clearly shows an area of improvement

Plant A:
1st Shift: BDFT/HR Direct: 226
2nd Shift: BDFT/HR Direct: 138

Plant B:
1st Shift BDFT/HR Direct: 211

Plant C:
1st Shift BDFT/HR Direct: 213

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Workforce

☞ Data identified that adjustments needed to be made to second shift in "Plant A" to increase production

☞ Root causes
- Supervisor promotion – new shift supervisor
- Employee turnover – lost line leads needed to train new
- Staff numbers on shift

☞ Corrective actions:
- First shift supervisor to work split shift to help train second shift supervisors
- Staff shift accordingly for full production on tables

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Workforce

Truss Labor Calculator   Enter values in green cell's only

	January	February	March	April
Budgeted Sales	1,000,000	1,000,000	1,000,000	1,000,000
% of Panel Sales	20	20	20	20
Sell $ of Jobs Produced (previous month)	1,000,000	1,000,000	1,000,000	1,000,000
Bd Ft of Jobs Produced (previous month)	1,000,000	1,000,000	1,000,000	1,000,000
Sell Price per BF (~1.20 - 1.50)	1.00	1.00	1.00	1.00
Ship Days	20	20	23	20
Overall BF production	75	85	95	105
Work day	9	9	9	8
Number of people needed	59.3	52.3	40.7	47.6
Plus (Vacation, Sick....)	2	2	2	2
Total Shop Employees needed	61.3	54.3	42.7	49.6

This number include shop supervisors
Does not include Drivers and Maintenance
Does not include Office personnel

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Throughput

➤ Challenge: Increase BDFT/HR production at plants

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Throughput
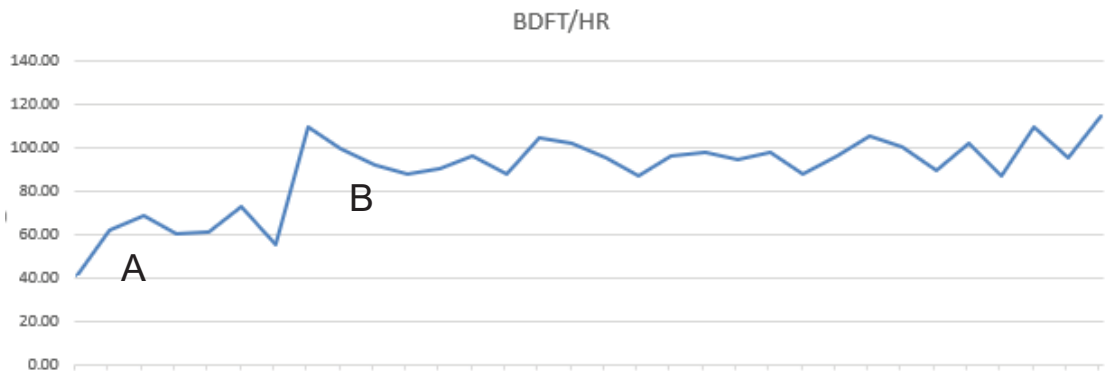
BDFT/HR

Throughput
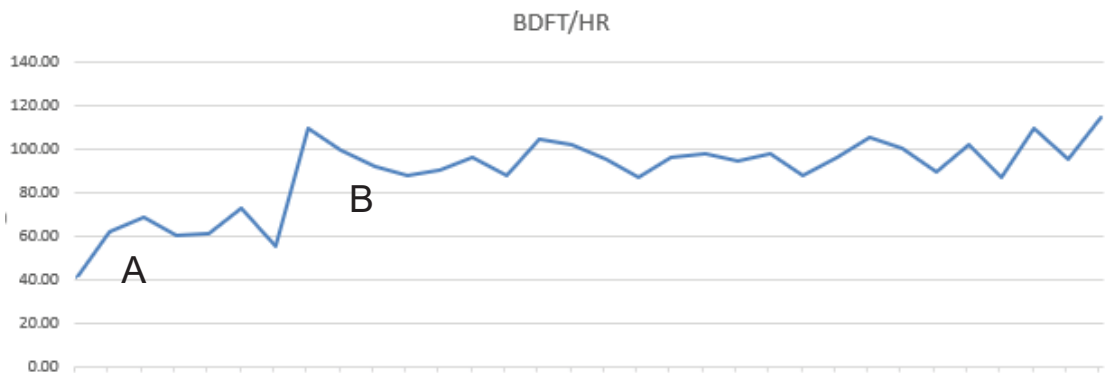
BDFT/HR

☞ Prior to A, trend was the same, 40 BDFT/HR. Plant manager was replaced and initial increase was seen

☞ Still not seeing averages the plant was able to produce. Point B, implemented bonus program that saw immediate and sustained success

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BDFT/HR

Total BDFT Per Week
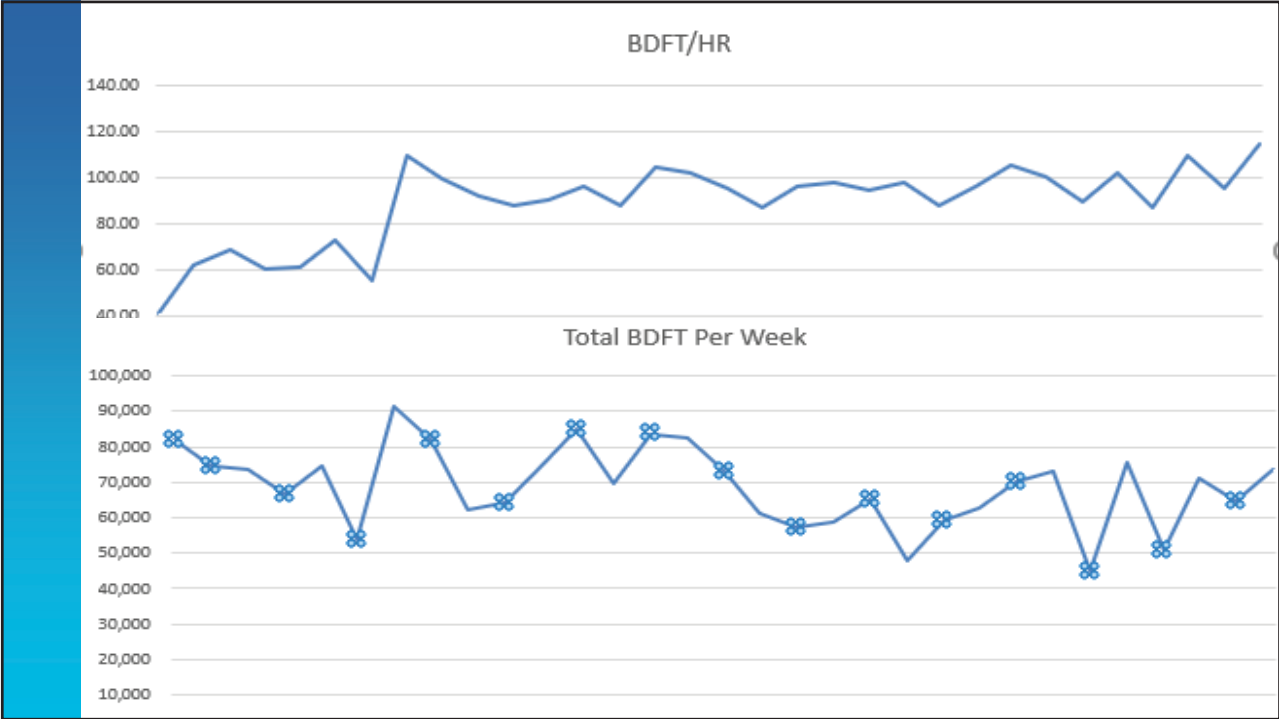
Throughput

Monday	Tuesday	Wednesday	Thursday	Friday
23	24	25	26	27
30	October 1	2	3	4
Jobs: 5	Jobs: 5	Jobs: 5	Jobs: 5	Jobs: 6
27599.15	17285.32	27653.82	22494.82	28156.98
110.4 %	69.1 %	110.6 %	90.0 %	112.6 %

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Throughput

Final Thoughts

- Use data to spot trends and identify problem areas
- Watch out for unintended consequences and have a way to identify
- Do a proper root-cause/corrective action exercise on the data
- You are never done tracking data

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Questions?

- Ben Pagel
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- Chad Pagels
  - Email: chadp@zeelandlumber.com

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SBCA Resources

☞ For more resources on this topic, visit www.sbcindustry.com and search for the below titles:

- Webinar: Making Lean Work for You: Part 1
- Webinar: Making Lean Work for You: Part 2
- Webinar: Making Lean Work for You: Part 3
- Lean Manufacturing…Where to Start?
- Why Measure?
- Do You Know if a Product is a Winner or Loser?

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Learning Labs

Wednesday

☞ 1 pm – Partnering with a National Builder

☞ 2:30 pm – Best Practices for Developing a Local Workforce

☞ 4:00 pm – Designing for the Code

Thursday

☞ 12 pm – Knowing Your People to Keep Your People

☞ 1:30 pm – Safety

☞ 3 pm – Cybersecurity

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Please Fill Out Your Session Evaluation

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