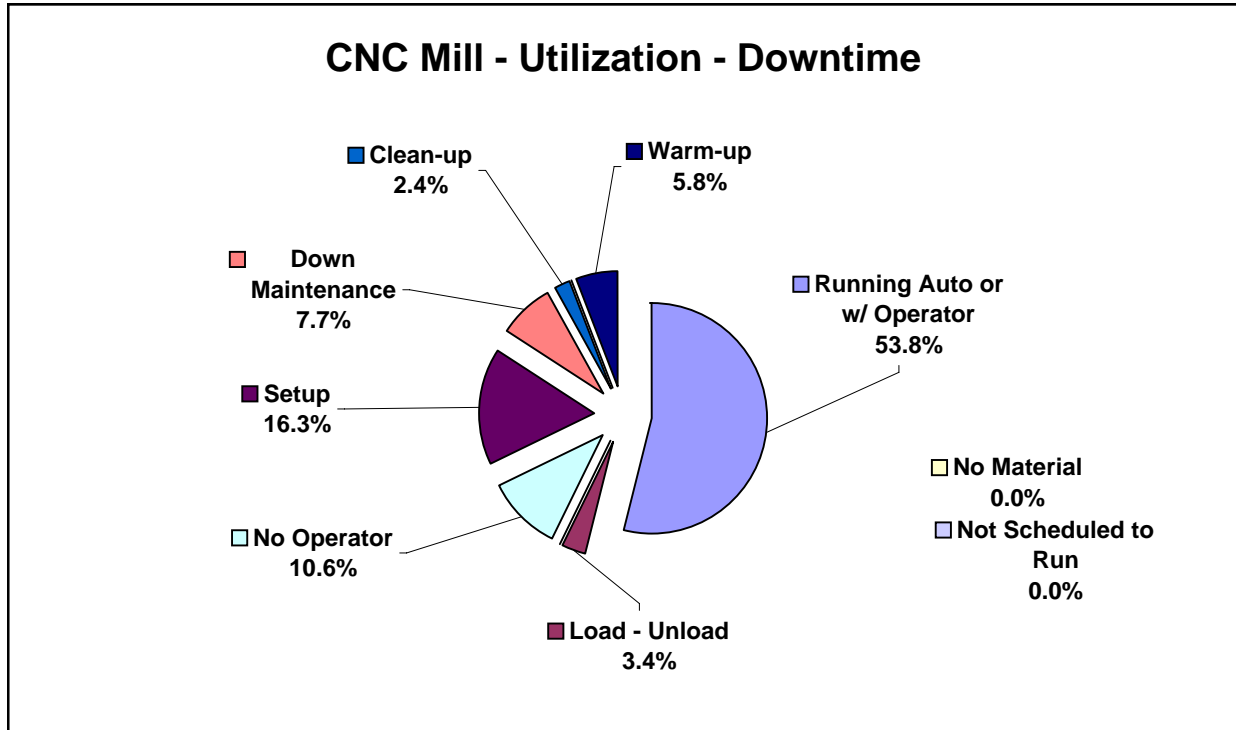


Greg Hart, President

Equipment Utilization Study Sample - Data Collection: Work Sampling Study

CNC Mill - Time & Status

StartTime	Status	+/- Min	Duration Minutes
6:30 AM	W	-60	60
7:30 AM	RO	10	10
7:40 AM	S	-20	20
8:00 AM	RO	50	50
8:50 AM	LU	-10	10
9:00 AM	NO	-15	15
9:15 AM	S	-30	30
9:45 AM	LU	-15	15
10:00 AM	NO	-15	15
10:15 AM	RA	95	95
11:50 AM	RO	20	20
12:10 PM	NO	-30	30
12:40 PM	RO	-50	50
1:30 PM	S	-30	30
2:00 PM	NO	-15	15
2:15 PM	RO	75	75
3:30 PM	S	-30	30
4:00 PM	RO	40	40
4:40 PM	NO	-20	20
5:00 PM	RO	60	60
6:00 PM	D	-80	80
7:20 PM	S	-30	30
7:50 PM	LU	-10	10
8:00 PM	RA	60	60
9:00 PM	RO	-30	30
9:30 PM	S	-30	30
10:00 PM	RA	70	70
11:10 PM	NO	-15	15
11:25 PM	C	-25	25
11:50 PM	NO	0	0
			1040



Category	Letter	Count	Total	Percent	Avg Time	Comment
Running Auto or w/ Operator	RA, RO	11	560	53.8%	50.9	
Load - Unload	LU	3	35	3.4%	11.7	
No Material	M	0	0	0.0%	NA	
No Operator	NO	7	110	10.6%	15.7	
Setup	S	6	170	16.3%	28.3	Includes adjustments
Down Maintenance	D	1	80	7.7%	80.0	
Clean-up	C	1	25	2.4%	25.0	
Not Scheduled to Run	X	0	0	0.0%	NA	
Warm-up	W	1	60	5.8%	60.0	
Total Available Time			1040	100%		
Running Automatic	RA	3	225	21.6%	75.0	Short Automatic Cycle
Running with Operator	RO	6	255	24.5%	42.5	Requires routine attention

## CNC Mill - Uptime - Down-time Trend

