

Downtime Reason Report July 2024

We're already more than halfway through 2024, and our customers have been logging their downtime reasons to help spot the highest contributing factors to their machine downtime.

I've crunched the data for the first half of this year to show you what the top reasons for downtime across the TMM system is. Before we look at the results let's look at why it's important to measure machine downtime.



Why measure downtime?

Machine downtime contributes hugely to a component's cost-to-produce. When machine's aren't running then the machine hourly rate is still counting up the actual cost of a batch, whilst the batch is making no progress in production. Most manufacturer's don't [even measure](#) the real runtime of their batches.

Understanding downtime reasons is key to production

The only way to reduce this cost-to-produce is to target those downtime reasons most responsible for machine downtime. That's why TrackMyMachines allows operators to input their own reasons for downtime, so the highest contributing downtime reasons can be reduced, and parts can be produced in a shorter time for a lower cost.

Downtime report July 2024

Now onto the data! Taking all the downtime reasons logged from Jan 1st 2024 to June 30th here's the chart (hover to enlarge):

Proportion of Downtime Reasons 2024 Jan-June

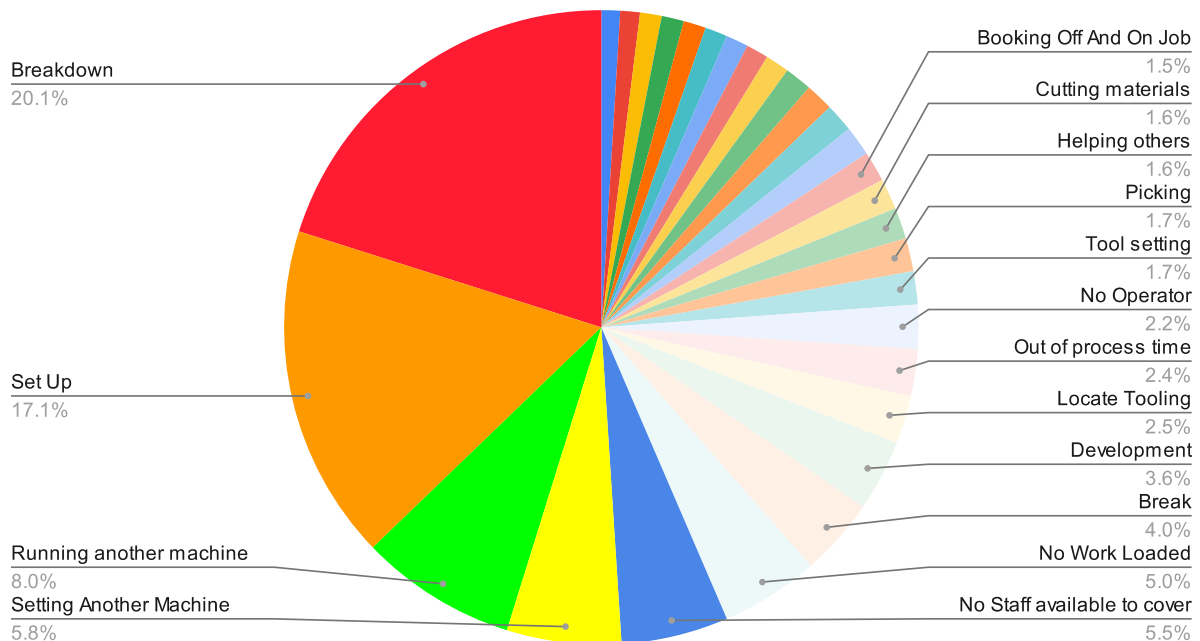


Figure 1: Pie chart showing the biggest downtime reasons by proportion

The biggest culprit: Machine Breakdown! Taking over 20% of the downtime on TMM and costing over 655 hours, breakdown is a production-killer. In second place, closely following it, is Set Up at 17% of downtime and 557 hours of downtime.

If these two downtime reasons were eliminated. Over 1200 hours of downtime for the first half of this year would have been saved. Multiply that by your machine hourly rate and you can imagine the monetary value that represents.

Downtime seems to be an 80/20 problem, where 80% of the issues are contained in 20% of the reasons. This means identifying your major problem and making a big investment. Figure 2 shows a bar chart with the raw duration of each downtime reason in hours. We can use this to make some recommendations and improve productivity.

Downtime Reasons 2024 Jan-Jun

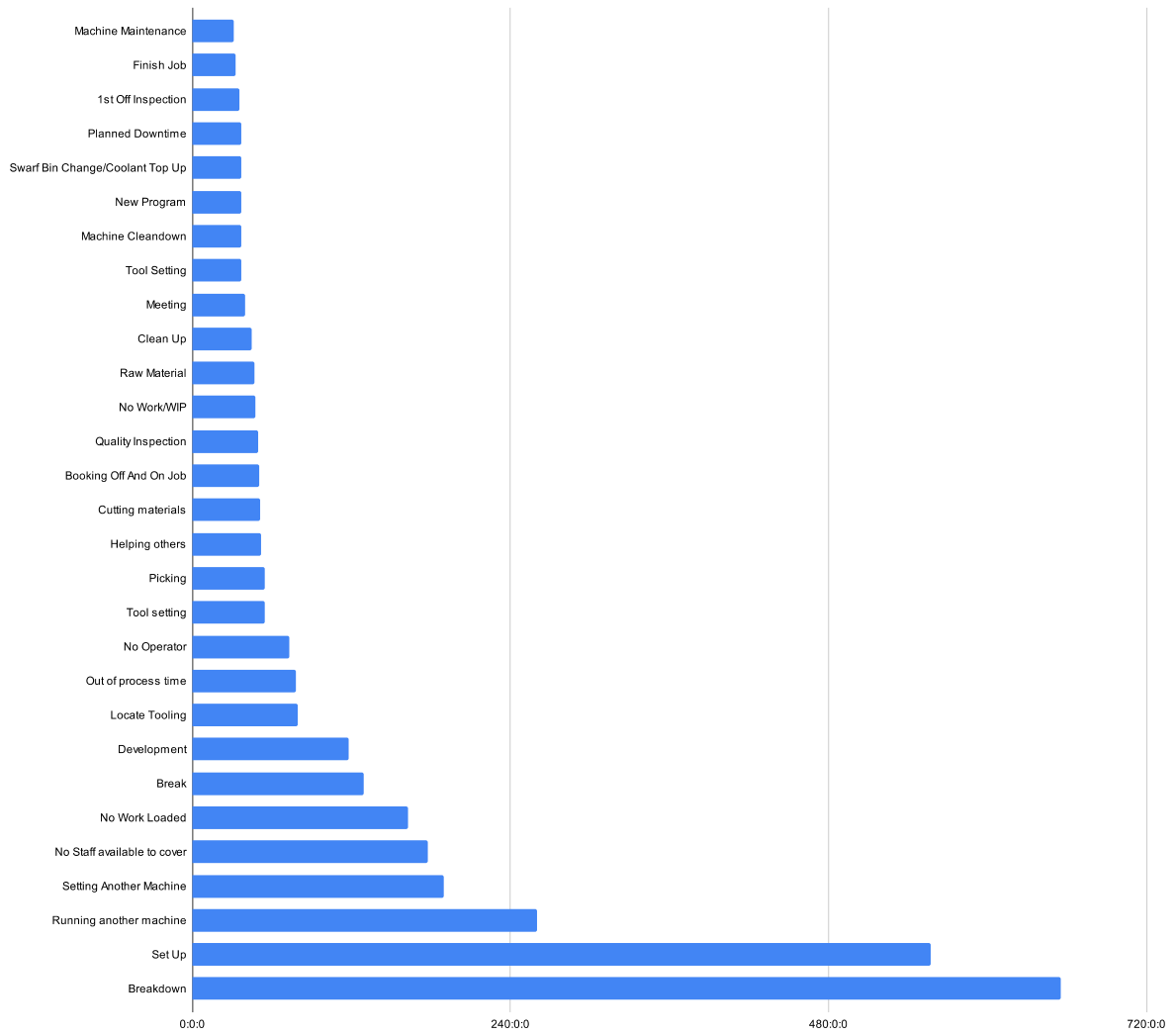


Figure 2: Bar chart showing downtime reasons ordered largest first

Recommendations

Let's analyze the new downtime data and provide recommendations to reduce downtime, along with estimated time and cost savings:

Analysis

Here is a breakdown of the major downtime reasons and their durations in hours:

1. **Equipment Breakdown:** 655:14:53 (20.10%)
2. **Machine Setup:** 557:19:25 (17.10%)
3. **Operating Another Machine:** 260:15:19 (7.99%)
4. **Setting Up Another Machine:** 189:56:51 (5.83%)
5. **Insufficient Staff Coverage:** 177:50:32 (5.46%)
6. **No Work Assigned:** 162:53:17 (5.00%)
7. **Break Time:** 129:09:07 (3.96%)
8. **Development Work:** 118:07:40 (3.62%)
9. **Tool Location:** 79:56:17 (2.45%)

Recommendations and Estimated Time Savings

1. *Equipment Breakdown*

- **Improvement Target:** 30% reduction
- **Estimated Savings:** 655.25 hours * 0.30 = 196.58 hours

2. *Machine Setup*

- **Improvement Target:** 25% reduction
- **Estimated Savings:** 557.32 hours * 0.25 = 139.33 hours

3. *Operating Another Machine*

- **Improvement Target:** 15% reduction
- **Estimated Savings:** 260.25 hours * 0.15 = 39.04 hours

4. *Setting Up Another Machine*

- **Improvement Target:** 25% reduction
- **Estimated Savings:** 190.00 hours * 0.25 = 47.50 hours

5. Insufficient Staff Coverage

- **Improvement Target:** 20% reduction
- **Estimated Savings:** 177.83 hours * 0.20 = 35.57 hours

6. No Work Assigned

- **Improvement Target:** 20% reduction
- **Estimated Savings:** 162.88 hours * 0.20 = 32.58 hours

7. Break Time

- **Improvement Target:** 10% reduction
- **Estimated Savings:** 129.15 hours * 0.10 = 12.92 hours

8. Development Work

- **Improvement Target:** 20% reduction
- **Estimated Savings:** 118.12 hours * 0.20 = 23.62 hours

9. Tool Location

- **Improvement Target:** 30% reduction
- **Estimated Savings:** 80.00 hours * 0.30 = 24.00 hours

Total Estimated Time Savings

Summing up the estimated time savings: [196.58 + 139.33 + 39.04 + 47.50 + 35.57 + 32.58 + 12.92 + 23.62 + 24.00 = 551.14]

Calculate Cost Savings

Using the machine hourly rate of £80 per hour: [551.14 £80/ = £44,091.20]

Summary

By implementing the suggested changes, you could potentially save approximately **551.14 hours** of downtime, which translates to a cost saving of approximately **£44,091.20**.

Here are the key recommendations for each major downtime reason:

1. **Equipment Breakdown:**
 - Implement preventive maintenance.
 - Use condition monitoring tools to predict failures.
2. **Machine Setup:**

- Apply Lean principles like SMED to reduce setup times.
- Provide standardized work instructions and training.
- 3. Operating Another Machine:**
 - Cross-train employees to handle multiple machines efficiently.
 - Improve scheduling to reduce overlaps.
- 4. Setting Up Another Machine:**
 - Use flexible manufacturing systems.
 - Ensure tools and materials are organized and readily available.
- 5. Insufficient Staff Coverage:**
 - Improve workforce planning and scheduling.
 - Consider temporary staffing during peak times.
- 6. No Work Assigned:**
 - Optimize workflow and job assignments.
 - Improve communication between departments.
- 7. Break Time:**
 - Implement staggered breaks.
 - Review break policies for efficiency.
- 8. Development Work:**
 - Streamline development processes.
 - Schedule development work during low production periods.
- 9. Tool Location:**
 - Implement 5S methodology to organize tools.
 - Use tool management systems.

These targeted improvements can significantly reduce downtime and enhance overall productivity at your facility.

Interested in talking machine monitoring? Drop me a message at rowan@trackmymachines.com or check out more information on trackmymachines.com

Appendix

Table 1: Table of the duration and proportion of these downtime reasons

Downtime Reason	Hours	Proportion
Scheduled Maintenance	31:01:59	0.95%
Job Completion	32:40:46	1.00%
Initial Inspection	35:50:39	1.10%
Scheduled Downtime	37:02:15	1.14%
Chip Bin Change/Coolant Refill	37:10:00	1.14%
Program Initialization	37:12:20	1.14%
Machine Cleaning	37:14:50	1.14%
Tool Calibration	37:18:27	1.14%
Attending a Meeting	39:34:04	1.21%
Area Cleanup	45:06:55	1.38%
Awaiting Raw Material	46:33:55	1.43%
No Work in Progress	47:34:37	1.46%
Quality Check	49:31:13	1.52%
Logging Job Status	50:15:33	1.54%
Material Cutting	51:18:05	1.57%
Assisting Colleagues	51:49:43	1.59%
Material Picking	54:59:31	1.69%
Tool Calibration	55:01:26	1.69%
Operator Unavailable	73:04:26	2.24%
Off-Process Time	78:06:09	2.40%
Tool Location	79:56:17	2.45%
Development Work	118:07:40	3.62%
Break Time	129:09:07	3.96%
No Work Assigned	162:53:17	5.00%
Insufficient Staff Coverage	177:50:32	5.46%
Setting Up Another Machine	189:56:51	5.83%
Operating Another Machine	260:15:19	7.99%
Machine Setup	557:19:25	17.10%
Equipment Breakdown	655:14:53	20.10%