

CBM Pilot Setup Worksheet

Select your pilot assets, match techniques to failure modes, document baselines, and set thresholds before data collection begins.

Companion to: *Fix the System*, Chapter 22. **Who uses it:** the reliability engineer, maintenance manager, and lead technician responsible for the CBM pilot. **When to use:** before the CBM pilot goes live — complete one sheet per candidate asset.

Plant: _____ Date: _____ Completed by: _____

PART 1 — Candidate Selection Filter

Apply to every asset being considered for the pilot. An asset must answer Yes to all three questions to qualify.

Asset Name / ID	Failure Mode	Detectable Before Functional Failure?	Development Period < PM Interval?	Consequence High?	Qualifies?
		Yes No	Yes No	Yes No	Yes No
		Yes No	Yes No	Yes No	Yes No
		Yes No	Yes No	Yes No	Yes No
		Yes No	Yes No	Yes No	Yes No
		Yes No	Yes No	Yes No	Yes No
		Yes No	Yes No	Yes No	Yes No
		Yes No	Yes No	Yes No	Yes No
		Yes No	Yes No	Yes No	Yes No

Guidance:

- **Detectable before failure?** — Does condition deteriorate in a way that instruments can measure (vibration, temperature, particle count, ultrasound)? If failure is sudden and random (electrical overcurrent, foreign object), CBM does not apply.
- **Development period < PM interval?** — Compare typical failure development time (weeks from onset to functional failure) to current PM frequency. If PM runs every 90 days and failure develops in 6 weeks, the PM structurally cannot catch it.
- **Consequence high?** — Production stop, long lead-time parts, safety exposure, or no redundancy. Low-consequence assets do not justify the monitoring investment.

Select no more than 5 assets for the initial pilot.

PART 2 — Technique Selection

For each qualified candidate, select the monitoring technique matched to the failure mode.

Technique reference:

Technique	Best For	Typical Detection Window	Route Frequency
Vibration Analysis	Bearing wear, imbalance, misalignment, looseness	4-8 weeks before failure	Monthly; weekly if trending toward alarm
Thermography	Electrical connections, motor windings, overloading	2-4 weeks before failure	Quarterly; monthly for high-criticality panels
Oil Analysis	Gearboxes, hydraulics, compressors — wear metals, contamination, viscosity	4-12 weeks depending on failure mode	Every 90-180 days
Ultrasound	Early-stage bearing defects, compressed air leaks, valve condition	6-12 weeks (bearing); immediate (leaks)	Monthly (bearings); quarterly (leak survey)

Asset Name / ID	Primary Failure Mode	Technique Se- lected	Route Frequency	Who Collects	Equipment Needed

PART 3 — Baseline Documentation

Complete one row per measurement point per asset. Take readings while asset is in known-good operating condition.

Rule: Do not take a baseline on an asset with a known issue. Verify condition is acceptable (recently serviced, no active alarms, no reported anomalies) before establishing the baseline.

[illegible]

Note: Always record operating conditions (load, speed, temperature, ambient) with every reading. A vibration baseline at 50% load is not comparable to a reading taken at full load. Conditions must match for trend comparison to be valid.

PART 4 — Alert and Alarm Thresholds

Define threshold values for each measurement point before data collection begins.

Starting thresholds (adjust based on operating history after 6 months):

- Alert: 150% of baseline value
- Alarm: 250% of baseline value
- ISO 10816 zone boundaries apply as a secondary check — use whichever threshold is more conservative.

[illegible]

				Yes	No	Yes	No		
				Yes	No	Yes	No		
				Yes	No	Yes	No		
				Yes	No	Yes	No		

90-Day Pilot Summary:

- Total readings collected: _____
- Alerts triggered: _____
- Alarms triggered: _____
- WOs generated from condition alerts: _____
- Failures prevented (planned repairs that caught developing faults): _____
- Unplanned failures on monitored assets during pilot: _____

From Fix the System by Ivan Getov. Companion to Chapter 22: Playbook 8 — Condition-Based Monitoring Implementation. getov.xyz/toolkit/fix-the-system/ch22/cbm-pilot-setup. Free. No email required.