

Planned maintenance: criticality to verified return

Use repeat-failure and task evidence to challenge a maintenance plan, define authorized work and verify both return to service and later effectiveness.



Completed maintenance, recurring loss

Fictional packaging line: transfer unit M8 stops intermittently. A scheduled external clean/check was marked complete on day 1; similar interruptions were recorded on days 3 and 6. Planner Kira is asked to double the task frequency immediately. The failure mechanism and execution detail are not yet established.

Your role and the reference condition

Maintenance planner with the qualified technician, operator and asset owner.

Normal: A maintenance task has a justified purpose, required competence/resources and evidence that the required function was restored.

Gap: Task completion is recorded, but recurrence continues and the task's relationship to the failure is unclear.

Work within these conditions

1. This lesson plans evidence and responsibilities, not technical disassembly, adjustment or isolation steps.
2. Calendar frequency and condition thresholds require asset-specific technical authority; none is prescribed by this exercise.

Fictional teaching case. Supplied observations support the exercise; proposed actions are not verified customer results.

See how the method works

Use asset function, failure history and deterioration evidence to decide what maintenance is needed. Distinguish tasks justified by time or condition from reactive work and repeated breakdown fixes. Plan the people, parts and access window before the task, then execute under the approved technical controls. Operations and maintenance should agree how correct function and readiness will be verified before return. Review whether the plan prevents important failures or simply creates more activity. Consistent failure and restoration definitions are needed before interpreting reliability measures. Operator observations provide useful evidence but do not replace specialist diagnosis or engineering acceptance criteria.



Connected method map: Review failure evidence, Plan justified work, Execute authorized work, Verify return, Review effectiveness. Every authored connection is shown with a numbered arrow and named legend.

Follow the evidence and decisions

Inspect the supplied case inputs

Record	Supplied fictional evidence
Required function	Transfer correctly without unplanned interruption
Day 1 task	External clean/check; completion tick only
Day 3 and day 6	Similar interruption descriptions; detail incomplete
Missing execution evidence	Condition found, action details and function verification
Frequency proposal	Twice as often; mechanism justification absent

01 / Connect failure to required function

Kira records what M8 failed to do, under which operating conditions and how the interruption was identified. She compares event descriptions before assuming they share a cause.

Why: Similar downtime labels may conceal different mechanisms.

Evidence / check: A common failure definition and event identities are established.

02 / Inspect the existing task's purpose

The technician explains which condition the clean/check is intended to detect or prevent and what execution evidence should exist. The team retrieves the actual task record rather than trusting the tick.

Why: A completed activity can be unsuitable, incompletely executed or unrelated to the recurring failure.

Evidence / check: The plan review distinguishes task suitability from execution uncertainty.

03 / Prepare justified work

The planner assigns technical investigation, appropriate access window, competence, parts/information and the return-verification requirement. Any task or interval change follows the responsible technical review.

Why: Planning makes authorized work executable; adding frequency without a mechanism can add cost and disruption without preventing loss.

Evidence / check: The work package names purpose, owner, prerequisites and acceptance evidence.

04 / Verify return and review recurrence

After authorized work, the asset owner accepts required function using the approved verification. The team then observes representative operating exposure and records recurrence separately from immediate return.

Why: Passing a restart check is not evidence that the maintenance plan will prevent the failure over time.

Evidence / check: Return-to-service record and later effectiveness review are distinct, linked records.

Completed maintenance-plan review - action outcome pending

Review question	Finding	Next evidence / owner
Same failure?	Similar descriptions; mechanism unconfirmed	Technician reconciles event conditions
Task appropriate?	Purpose needs connection to loss	Technical owner reviews suitability
Task executed?	Completion tick lacks detail	Retrieve condition/action/verification evidence
Plan change?	Doubling frequency not justified yet	Planner prepares evidence-led work
Effective?	No future result supplied	Asset owner verifies function and recurrence

The record was complete but the task targeted another condition

Further fictional review confirms that the scheduled task was executed correctly, but its documented purpose does not address the interruption mechanism now supported by technical evidence.

Decision

Retain the completed-task record and revise the maintenance strategy through the technical owner. Do not label the technician noncompliant or simply repeat the irrelevant task faster.

Reasoning

Execution quality and task suitability are different explanations with different responses.

What would change the decision?

Link the supported failure mechanism to the proposed task and define how effectiveness will be reviewed.

Practise with a changed case

A repeated alarm after an inspection

New fictional asset Q5 has two repeat alarms after a scheduled inspection. The record states the inspection was completed, but the normal-condition measurement and return test are missing. A supervisor concludes the interval is too long.

Evidence	Status
Two alarms	Recorded; conditions need comparison
Inspection completed	Tick present
Condition measurement	Missing
Return test	Missing
Long interval cause	Unverified proposal

Your task

1. Separate execution, task suitability and interval questions.
2. Draft the next work-review record and required return evidence.
3. Specify how later effectiveness differs from immediate functional verification.

Use the next page to record your reasoning before reading the answer.

Your practice worksheet

A repeated alarm after an inspection

Required function / event definition

Existing task and mechanism

Execution evidence gap

Authorized investigation/work prerequisites

Return and recurrence review evidence

Complete your reasoning before turning to the answer. Use the separate learner workbook for group practice.

Check your reasoning and transfer it

1. Missing measurements and a return test leave execution evidence unresolved; the interval cannot be diagnosed from the tick and alarms alone.
2. Retrieve records, compare alarm conditions and ask the qualified owner to evaluate task suitability. A justified plan names the technical work and required acceptance evidence without inventing a repair.
3. Immediate function verification supports return under defined conditions; later representative exposure tests recurrence and plan effectiveness.

Suggested completed record

Question	Evidence / decision
Execution	Obtain condition and return records
Suitability	Connect task to supported mechanism
Interval	Review only with justified failure/condition evidence
Effectiveness	Track comparable later operation and recurrence

Plausible wrong turns

1. More frequent maintenance is not automatically more effective maintenance.
2. A completion percentage is not a reliability result.

Evidence of a sound answer

1. Distinguish the competing explanations.
2. Keep technical authority and prerequisites explicit.
3. Require separate return and later-effectiveness evidence.

Take the learning back to work

Commitment	Agreed follow-through
Owner	Maintenance technical owner and planner with the asset owner
Record	Failure history, task review, authorized work package and effectiveness record
Review	Before plan changes, at return acceptance and after representative exposure
Verification evidence	Failure mechanism, execution detail, restored function and recurrence behavior
If unresolved	Continue technical investigation and adjust the approved maintenance strategy; retain honest unresolved status.

Help someone else apply the method

Prepare

1. M8 event and task cards
2. Blank plan-review/work package
3. Separate immediate and later verification headings

Minutes	Activity and coaching prompt
5	Clarify required function Are these events actually the same failure?
7	Review task evidence Does the tick prove suitability or execution?
9	Practice Q5 plan review What evidence would justify changing the interval?
5	Debrief effectiveness What can a restart test not establish?

Debrief

1. If learners choose a repair, ask which supplied evidence justifies it.
2. If they only request more data, require a named question, owner and record.

Individual or remote practice

Write three competing explanations for recurrence and the evidence needed to distinguish them.

Connect the method and check its boundaries

Before application

1. Asset and failure records
2. Technical maintenance authority

Outside this lesson

1. More scheduled tasks is not always better
2. MTBF/MTTR require consistent definitions

JIPM: 2020 Assessment Preparation

JIPM: 2020 Assessment Preparation

Role sharing, maintenance information, MTBF/MTTR, diagnosis and repeat-failure analysis; historical methodology, not current award eligibility

Historical 2020 methodology reference only, not current TPM award eligibility or an asset-specific maintenance procedure. All OPEX cases and records are fictional.

[Open this lesson and its visual aids](#)