CASE OVERVIEW

Fictional carton-sealer reliability case

Project boundary

An entirely fictional carton-sealing cell experiences repeated drive and sensor stops. The case separates failure frequency, repair time, lost production and maintenance effort while testing a focused reliability improvement bundle.

Reference metrics

32 failures in 960 operating hours; MTBF = 30.0 h; 12 failures in 720 operating hours; MTBF = 60.0 h; Mean repair time improves from 1.8 h to 1.1 h; Inherent availability rises from 94.3% to 98.2% using MTBF/(MTBF+MTTR); Estimated lost-output and maintenance burden falls by $31,400 per quarter

Evidence caution

All values are fictional and illustrate documentation logic only.

Completed example | RL-D01 Reliability opportunity an

Question

Create a concise evidence record for reliability opportunity and operational harm within the Define phase of this Reliability Lean Six Sigma Project Forms workbook.

Fictional evidence

Fictional case cue: 32 failures in 960 operating hours; MTBF = 30.0 h. Use this only as invented practice data; replace it with controlled project evidence.

Worked record

The fictional team records a bounded reliability opportunity and operational harm entry, identifies the controlled source, states the result and notes the decision consequence.

Decision

Define evidence is accepted only for the fictional route described in this case; unresolved contradictions remain visible.

DEFINE

Completed example | RL-D02 DMAIC reliability project c

Question

Authorize the project with a bounded problem, outcome, scope, ownership and decision route.

Fictional evidence

Fictional case cue: 12 failures in 720 operating hours; MTBF = 60.0 h. Use this only as invented practice data; replace it with controlled project evidence.

Worked record

The fictional team records a bounded dmaic reliability project charter entry, identifies the controlled source, states the result and notes the decision consequence.

Decision

Define evidence is accepted only for the fictional route described in this case; unresolved contradictions remain visible.

Completed example | RL-D03 Asset and failure populati

Question

Create a concise evidence record for asset and failure population boundary within the Define phase of this Reliability Lean Six Sigma Project Forms workbook.

Fictional evidence

Fictional case cue: Mean repair time improves from 1.8 h to 1.1 h. Use this only as invented practice data; replace it with controlled project evidence.

Worked record

The fictional team records a bounded asset and failure population boundary entry, identifies the controlled source, states the result and notes the decision consequence.

Decision

Define evidence is accepted only for the fictional route described in this case; unresolved contradictions remain visible.

Completed example | RL-D04 Customer and production

Question

Create a concise evidence record for customer and production ctq within the Define phase of this Reliability Lean Six Sigma Project Forms workbook.

Fictional evidence

Fictional case cue: Inherent availability rises from 94.3% to 98.2% using MTBF/(MTBF+MTTR). Use this only as invented practice data; replace it with controlled project evidence.

Worked record

The fictional team records a bounded customer and production ctq entry, identifies the controlled source, states the result and notes the decision consequence.

Decision

Define evidence is accepted only for the fictional route described in this case; unresolved contradictions remain visible.

Completed example | RL-M01 Failure taxonomy and coc

Question

Create a concise evidence record for failure taxonomy and coding within the Measure phase of this Reliability Lean Six Sigma Project Forms workbook.

Fictional evidence

Fictional case cue: 32 failures in 960 operating hours; MTBF = 30.0 h. Use this only as invented practice data; replace it with controlled project evidence.

Worked record

The fictional team records a bounded failure taxonomy and coding entry, identifies the controlled source, states the result and notes the decision consequence.

Decision

Measure evidence is accepted only for the fictional route described in this case; unresolved contradictions remain visible.

MEASURE

Completed example | RL-M02 Asset hierarchy and ID int

Question

Create a concise evidence record for asset hierarchy and id integrity within the Measure phase of this Reliability Lean Six Sigma Project Forms workbook.

Fictional evidence

Fictional case cue: 12 failures in 720 operating hours; MTBF = 60.0 h. Use this only as invented practice data; replace it with controlled project evidence.

Worked record

The fictional team records a bounded asset hierarchy and id integrity entry, identifies the controlled source, states the result and notes the decision consequence.

Decision

Measure evidence is accepted only for the fictional route described in this case; unresolved contradictions remain visible.

MEASURE

Completed example | RL-M03 CMMS data extraction pla

Question

Define a controlled, reviewable plan for cmms data extraction plan with owners, inputs, timing and acceptance criteria.

Fictional evidence

Fictional case cue: Mean repair time improves from 1.8 h to 1.1 h. Use this only as invented practice data; replace it with controlled project evidence.

Worked record

The fictional team records a bounded cmms data extraction plan entry, identifies the controlled source, states the result and notes the decision consequence.

Decision

Measure evidence is accepted only for the fictional route described in this case; unresolved contradictions remain visible.

Completed example | RL-M04 Failure-event reconciliati

Question

Create a concise evidence record for failure-event reconciliation within the Measure phase of this Reliability Lean Six Sigma Project Forms workbook.

Fictional evidence

Fictional case cue: Inherent availability rises from 94.3% to 98.2% using MTBF/(MTBF+MTTR). Use this only as invented practice data; replace it with controlled project evidence.

Worked record

The fictional team records a bounded failure-event reconciliation entry, identifies the controlled source, states the result and notes the decision consequence.

Decision

Measure evidence is accepted only for the fictional route described in this case; unresolved contradictions remain visible.

MEASURE

Completed example | RL-M05 Downtime clock definitio

Question

Create an operational definition for downtime clock definition that two independent reviewers can apply consistently.

Fictional evidence

Fictional case cue: Estimated lost-output and maintenance burden falls by $31,400 per quarter. Use this only as invented practice data; replace it with controlled project evidence.

Worked record

The fictional team records a bounded downtime clock definition entry, identifies the controlled source, states the result and notes the decision consequence.

Decision

Measure evidence is accepted only for the fictional route described in this case; unresolved contradictions remain visible.

ANALYZE

Completed example | RL-A01 Failure stratification matr

Question

Structure evidence for failure stratification matrix so patterns can be examined without treating association as proof of cause.

Fictional evidence

Fictional case cue: 32 failures in 960 operating hours; MTBF = 30.0 h. Use this only as invented practice data; replace it with controlled project evidence.

Worked record

The fictional team records a bounded failure stratification matrix entry, identifies the controlled source, states the result and notes the decision consequence.

Decision

Analyze evidence is accepted only for the fictional route described in this case; unresolved contradictions remain visible.

ANALYZE

Completed example | RL-A02 Downtime Pareto analysis

Question

Structure evidence for downtime pareto analysis so patterns can be examined without treating association as proof of cause.

Fictional evidence

Fictional case cue: 12 failures in 720 operating hours; MTBF = 60.0 h. Use this only as invented practice data; replace it with controlled project evidence.

Worked record

The fictional team records a bounded downtime pareto analysis entry, identifies the controlled source, states the result and notes the decision consequence.

Decision

Analyze evidence is accepted only for the fictional route described in this case; unresolved contradictions remain visible.

Completed example | RL-A03 Failure cause-and-effect a

Question

Structure evidence for failure cause-and-effect analysis so patterns can be examined without treating association as proof of cause.

Fictional evidence

Fictional case cue: Mean repair time improves from 1.8 h to 1.1 h. Use this only as invented practice data; replace it with controlled project evidence.

Worked record

The fictional team records a bounded failure cause-and-effect analysis entry, identifies the controlled source, states the result and notes the decision consequence.

Decision

Analyze evidence is accepted only for the fictional route described in this case; unresolved contradictions remain visible.

ANALYZE

Completed example | RL-A04 Reliability 5 Why analysis

Question

Structure evidence for reliability 5 why analysis so patterns can be examined without treating association as proof of cause.

Fictional evidence

Fictional case cue: Inherent availability rises from 94.3% to 98.2% using MTBF/(MTBF+MTTR). Use this only as invented practice data; replace it with controlled project evidence.

Worked record

The fictional team records a bounded reliability 5 why analysis entry, identifies the controlled source, states the result and notes the decision consequence.

Decision

Analyze evidence is accepted only for the fictional route described in this case; unresolved contradictions remain visible.

Completed example | RL-A05 Failure timeline reconstru

Question

Create a concise evidence record for failure timeline reconstruction within the Analyze phase of this Reliability Lean Six Sigma Project Forms workbook.

Fictional evidence

Fictional case cue: Estimated lost-output and maintenance burden falls by $31,400 per quarter. Use this only as invented practice data; replace it with controlled project evidence.

Worked record

The fictional team records a bounded failure timeline reconstruction entry, identifies the controlled source, states the result and notes the decision consequence.

Decision

Analyze evidence is accepted only for the fictional route described in this case; unresolved contradictions remain visible.

Completed example | RL-I01 Reliability improvement op

Question

Create a concise evidence record for reliability improvement opportunity list within the Improve phase of this Reliability Lean Six Sigma Project Forms workbook.

Fictional evidence

Fictional case cue: 32 failures in 960 operating hours; MTBF = 30.0 h. Use this only as invented practice data; replace it with controlled project evidence.

Worked record

The fictional team records a bounded reliability improvement opportunity list entry, identifies the controlled source, states the result and notes the decision consequence.

Decision

Improve evidence is accepted only for the fictional route described in this case; unresolved contradictions remain visible.

Completed example | RL-I02 Maintenance task redesign

Question

Create a concise evidence record for maintenance task redesign within the Improve phase of this Reliability Lean Six Sigma Project Forms workbook.

Fictional evidence

Fictional case cue: 12 failures in 720 operating hours; MTBF = 60.0 h. Use this only as invented practice data; replace it with controlled project evidence.

Worked record

The fictional team records a bounded maintenance task redesign entry, identifies the controlled source, states the result and notes the decision consequence.

Decision

Improve evidence is accepted only for the fictional route described in this case; unresolved contradictions remain visible.

Completed example | RL-I03 Inspection point improvem

Question

Create a concise evidence record for inspection point improvement within the Improve phase of this Reliability Lean Six Sigma Project Forms workbook.

Fictional evidence

Fictional case cue: Mean repair time improves from 1.8 h to 1.1 h. Use this only as invented practice data; replace it with controlled project evidence.

Worked record

The fictional team records a bounded inspection point improvement entry, identifies the controlled source, states the result and notes the decision consequence.

Decision

Improve evidence is accepted only for the fictional route described in this case; unresolved contradictions remain visible.

IMPROVE

Completed example | RL-I04 Condition-monitoring trigg

Question

Monitor condition-monitoring trigger design with an explicit trigger, reaction and accountable owner.

Fictional evidence

Fictional case cue: Inherent availability rises from 94.3% to 98.2% using MTBF/(MTBF+MTTR). Use this only as invented practice data; replace it with controlled project evidence.

Worked record

The fictional team records a bounded condition-monitoring trigger design entry, identifies the controlled source, states the result and notes the decision consequence.

Decision

Improve evidence is accepted only for the fictional route described in this case; unresolved contradictions remain visible.

CONTROL

Completed example | RL-C01 Reliability control plan

Question

Define a controlled, reviewable plan for reliability control plan with owners, inputs, timing and acceptance criteria.

Fictional evidence

Fictional case cue: 32 failures in 960 operating hours; MTBF = 30.0 h. Use this only as invented practice data; replace it with controlled project evidence.

Worked record

The fictional team records a bounded reliability control plan entry, identifies the controlled source, states the result and notes the decision consequence.

Decision

Control evidence is accepted only for the fictional route described in this case; unresolved contradictions remain visible.

CONTROL

Completed example | RL-C02 MTBF monitoring

Question

Monitor mtbf monitoring with an explicit trigger, reaction and accountable owner.

Fictional evidence

Fictional case cue: 12 failures in 720 operating hours; MTBF = 60.0 h. Use this only as invented practice data; replace it with controlled project evidence.

Worked record

The fictional team records a bounded mtbf monitoring entry, identifies the controlled source, states the result and notes the decision consequence.

Decision

Control evidence is accepted only for the fictional route described in this case; unresolved contradictions remain visible.

CONTROL

Completed example | RL-C03 MTTR monitoring

Question

Monitor mttr monitoring with an explicit trigger, reaction and accountable owner.

Fictional evidence

Fictional case cue: Mean repair time improves from 1.8 h to 1.1 h. Use this only as invented practice data; replace it with controlled project evidence.

Worked record

The fictional team records a bounded mttr monitoring entry, identifies the controlled source, states the result and notes the decision consequence.

Decision

Control evidence is accepted only for the fictional route described in this case; unresolved contradictions remain visible.

CONTROL

Completed example | RL-C04 Availability monitoring

Question

Monitor availability monitoring with an explicit trigger, reaction and accountable owner.

Fictional evidence

Fictional case cue: Inherent availability rises from 94.3% to 98.2% using MTBF/(MTBF+MTTR). Use this only as invented practice data; replace it with controlled project evidence.

Worked record

The fictional team records a bounded availability monitoring entry, identifies the controlled source, states the result and notes the decision consequence.

Decision

Control evidence is accepted only for the fictional route described in this case; unresolved contradictions remain visible.