

# 8D-REPORT: Bearing Failure

Example: Premature bearing wear in transmission

HEADER							
8D-No.	Status	Trigger	Customer	Start	Target	End	K
8D-2024-042	Completed	Field Return	AutoCorp	2024-11-15	2024-12-05	2024-12-04	High

D1 - TEAM			
Role	Name	Department	Contact
Sponsor	Dr. Hans Müller	Engineering	h.mueller@auto.com
Team Lead	Thomas Weber	Quality	t.weber@auto.com
Member	Klaus Schmidt	Production	k.schmidt@auto.com
Member	Stefan Koch	Supplier QM	s.koch@auto.com
Expert	Dr. Lisa Braun	Materials	l.braun@auto.com

D2 - PROBLEM DESCRIPTION (5W2H)	
Question	Description
WHAT?	Premature bearing failure after 15,000km
WHERE?	Transmission assembly, Line 3
WHEN?	Since Oct 2024, Lot #2024-10-15 onwards
WHO?	End customers, dealers, production team
WHY?	Warranty costs, safety risk, recall potential
HOW?	Field returns, customer complaints, dealer reports
HOW MUCH?	127 failures, €890,000 warranty costs

D3 - CONTAINMENT ACTIONS						
ID	Action	Type	Owner	Due	Status	✓
D3-001	Quarantine affected lot inventory	Quarantine	Klaus	2024-11-16	Completed	Yes
D3-002	100% inspection of current production	100% Inspection	Thomas	2024-11-16	Completed	Yes
D3-003	Customer notification for inspection	Customer Info	Stefan	2024-11-17	Completed	Yes

D4 - ROOT CAUSE ANALYSIS			
5-Why TUA (Technical Cause of Occurrence)			
No.	Why?	Because...	Cat.

1	Why failure?	Bearing surface wear	Material
2	Why wear?	Insufficient hardness	Material
3	Why insufficient?	Heat treatment deviation	Method
4	Why deviation?	Furnace temperature drift	Machine
5	Why drift?	Sensor calibration overdue	Measurement

– TUA Root Cause: **Furnace temperature sensor out of calibration causing heat treatment deviation**

**5-Why SUA (Systemic Cause of Occurrence)**

No.	Why?	Because...	Cat.
1	Why overdue?	No calibration tracking	Method
2	Why no tracking?	Manual calendar system	Method
3	Why manual?	Never digitized	Management
4			
5			

– SUA Root Cause: **No automated calibration management system at supplier**

**5-Why TUN (Technical Cause of Non-Detection)**

No.	Why?	Because...	Cat.
1	Why not detected?	Hardness test sampling	Measurement
2	Why sampling?	Destructive test	Method
3	Why destructive?	No inline hardness check	Machine
4			
5			

– TUN Root Cause: **Destructive testing with statistical sampling missed deviation**

**5-Why SUN (Systemic Cause of Non-Detection)**

No.	Why?	Because...	Cat.
1	Why no inline?	Never evaluated alternatives	Management
2	Why not evaluated?	Cost focus	Management
3			
4			
5			

– SUN Root Cause: **No investment in non-destructive inline testing technology**

**D5 – SELECT CORRECTIVE ACTIONS**

ID	Corrective Action	Addresses	Prio	Select	Remarks
D5-001	Recalibrate furnace sensors	TUA	High	Yes	Immediate
D5-002	Implement calibration tracking system	SUA	High	Yes	
D5-003	Increase hardness sampling rate	TUN	Medium	Yes	Interim
D5-004	Evaluate inline hardness testing	SUN	Medium	Yes	Long-term

D6 – IMPLEMENT CORRECTIVE ACTIONS					
ID	Implementation Task	Owner	Due	Status	Verification
D6-001	Emergency sensor calibration	Stefan	2024-11-18	Completed	Cal cert #4521
D6-002	Install calibration software	Klaus	2024-11-25	Completed	System live
D6-003	Double hardness sampling	Thomas	2024-11-20	Completed	SPC data
Effectiveness Validation		Method	Result		OK?
		Capability Study (Cpk)	Cpk > 1.67 for hardness after 1000 parts		Yes

D7 – PREVENTIVE ACTIONS					
ID	Preventive Action	Type	Owner	Status	Done
D7-001	Update Supplier FMEA	FMEA Update	Stefan	Completed	Yes
D7-002	Revise supplier audit checklist	Audit	Thomas	Completed	Yes
D7-003	Calibration management training	Training	Klaus	Completed	Yes

D8 – CLOSURE & LESSONS LEARNED	
Lessons Learned	Team Recognition
Supplier calibration systems require regular audit. Inline testing ROI must be evaluated.	Team Excellence Award

 NOTE: This example is based on fictional data and is for educational purposes only. Any resemblance to actual companies, persons, or events is purely coincidental.