# Article information:

Cause analysis and countermeasure on premature failure of a driven gear for the high-speed train - ScienceDirect  
<https://www.sciencedirect.com/science/article/pii/S1350630722004617>

# Article summary:

1. A premature cracking failure of a driven gear in a high-speed railway gearbox was investigated.

2. The root cause of the failure was found to be an improper grinding process, which reduced the hardness and contact fatigue strength of the meshing surface.

3. Rolling contact fatigue was identified as the main failure mechanism, and pertinent prevention measures were proposed.

# Article rating:

Appears well balanced: The article presents the information in a reliable and balanced way, without biases and prejudices. The claims made in the article are well supported and, where applicable, all sides of the argument are given opportunity to present their point of view. The article appears trustworthy and reliable.

# Article analysis:

The article “Cause Analysis and Countermeasure on Premature Failure of a Driven Gear for the High-Speed Train” is generally reliable and trustworthy. It provides a comprehensive analysis of the premature cracking failure of a driven gear in a high-speed railway gearbox after running 600,000 km, using physical and chemical inspection, morphology observation and inspection of the meshing surface, magnetic particle inspection, Barkhausen noise analysis (BNA) inspection, etc., to identify the root cause of the failure. The article also presents pertinent prevention measures for similar gears in service based on its findings.

The article does not appear to have any biases or one-sided reporting; it presents both sides equally by providing an overview of previous research related to gear failures before discussing its own findings. Furthermore, all claims made are supported by evidence from laboratory tests and engineering practice. There are no missing points of consideration or missing evidence for any claims made; all relevant information is provided in detail throughout the article. Additionally, there is no promotional content or partiality present in this article; it is purely focused on providing an objective analysis of its findings without any bias towards any particular product or company. Finally, possible risks are noted throughout the article; it mentions that unexpected failures can occur due to long-term service in complex random load environments and suggests preventive measures to avoid such failures.

# Topics for further research:

* Gearbox Failure Prevention
* High-Speed Train Gearbox Design
* Magnetic Particle Inspection
* Barkhausen Noise Analysis
* Gearbox Failure Analysis
* Gearbox Failure Modes

# Report location:

<https://www.fullpicture.app/item/049e762b2f5acfc9bdf488e3a154be9a>