OPPORTUNITIES for IMPROVING ROLLER BEARING PERFORMANCE

Railway Supply Institute
September 25, 2006
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Discussion Topics

- Loose Backing Rings
- Displaced Adapters
Rule 97 CRB Data
Loose Backing Ring

Year | CRB Data
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2001 | 32,543
2002 | 31,242
2003 | 31,207
2004 | 32,181
2005 | 33,763
Non-Fitted vs. Fitted Application

Non-Fitted Application

Fitted Application
Fitted Backing Ring on Undersized Dustguard

Gap between untoleranced dustguard and fitted backing ring
Recommendation - All “Fitted” Applications

- Axles with “untoleranced” dustguard diameters.
  - results in a “non-fitted application”, even if fitted backing ring is applied.
- Axles with “worn” (undersized) dustguard diameters
- All new cars
- All 100 ton cars (with either new or reconditioned bearings)
Sure-Fit Universal Backing Ring

Compressible insert ring
Journal Condition
(After Cleaning)
Sure-Fit Backing Ring Field Inspection

- Wheelset had accumulated more than 52,000 miles in operation at the time of removal for inspection.
- The bearings were found to be in good condition and suitable for further service.
- The Sure-Fit backing rings were tight at tear down and removal forces measured were consistent with laboratory data.
- Axle Journals were found to be in good condition.
Sure-Fit Backing Rings in Service

- Over 2,000 Sure-Fit Universal Backing Ring equipped bearings in service.
- First bearings with Sure-Fit UBR’s placed into service in October 2004 and have now accumulated over 100,000 miles satisfactory service.
- Plan to complete bearing inspections for full unconditional AAR approval by the end of this year.
Bearings Distressed for “Adapter Related” Causes
Timken hot box database 2001-2005
Seal Case Damage – Adapter Related
Bearing Damage due to Displaced Adapter
Frame Keys

Primary Purpose => Prevent Displaced Adapters
Frame Key Clearance Sketch
TIMKEN
Where You Turn

Rail Bearing Service