




**AAR Manual of Standards and Recommended Practices
Wheels and Axles**

RP-633

MD-12 AAR FAILED AXLE REPORT

FREIGHT CAR, PASSENGER CAR, AND LOCOMOTIVE
(DO NOT REPORT BURNED-OFF JOURNAL CAUSED BY BEARING/LUBRICATION FAILURE)

<p>CAR INITIAL</p> <div style="border: 1px solid black; width: 40px; height: 20px; margin: 5px;"></div> <p>CAR NUMBER</p> <div style="border: 1px solid black; width: 40px; height: 20px; margin: 5px;"></div>	<p>KIND OF EQUIPMENT</p> <table style="width:100%; font-size: small;"> <tr> <td>B—Box</td> <td>S—Stock</td> </tr> <tr> <td>C—Cab</td> <td>T—Tank</td> </tr> <tr> <td>F—Flat</td> <td>O—Other</td> </tr> <tr> <td>G—Gondola</td> <td>1—Loco. Switch.</td> </tr> <tr> <td>H—Hopper</td> <td>2—Loco. Pass.</td> </tr> <tr> <td>L—Cov. Hop.</td> <td>3—Loco. Road</td> </tr> <tr> <td>P—Pass.</td> <td></td> </tr> <tr> <td>R—Refrig.</td> <td></td> </tr> </table>	B—Box	S—Stock	C—Cab	T—Tank	F—Flat	O—Other	G—Gondola	1—Loco. Switch.	H—Hopper	2—Loco. Pass.	L—Cov. Hop.	3—Loco. Road	P—Pass.		R—Refrig.		<p>DATE OF FAILURE</p> <p align="center">Month Day Year</p> <div style="border: 1px solid black; width: 40px; height: 20px; margin: 5px;"></div>	<p>TYPE OF AXLE (SEE SKETCH BELOW)</p> <p align="center">2, 4, 5</p> <div style="border: 1px solid black; width: 40px; height: 20px; margin: 5px;"></div>
B—Box	S—Stock																		
C—Cab	T—Tank																		
F—Flat	O—Other																		
G—Gondola	1—Loco. Switch.																		
H—Hopper	2—Loco. Pass.																		
L—Cov. Hop.	3—Loco. Road																		
P—Pass.																			
R—Refrig.																			
<p>LOCATION OF FRACTURE</p> <table style="width:100%; font-size: x-small;"> <tr> <td>JR—Journal</td> <td>WS—Wheel Seat</td> </tr> <tr> <td>BA—Body of Axle</td> <td>SB—Support Bearing</td> </tr> </table> <div style="border: 1px solid black; width: 40px; height: 20px; margin: 5px;"></div>	JR—Journal	WS—Wheel Seat	BA—Body of Axle	SB—Support Bearing	<p>AXLE DIAMETER (INCH FRACTION)</p> <p align="center">5 1/2 × 10—550 6 × 1—600 6 1/2 × 12—650 7 × 12—700</p> <div style="border: 1px solid black; width: 40px; height: 20px; margin: 5px;"></div>	<p>WHEEL MOUNTING DATE</p> <p align="center">Month Year</p> <div style="border: 1px solid black; width: 40px; height: 20px; margin: 5px;"></div>													
JR—Journal	WS—Wheel Seat																		
BA—Body of Axle	SB—Support Bearing																		
<p align="center">MANUFACTURING INFORMATION (see reverse side)</p> <p>Manufacturer</p> <div style="border: 1px solid black; width: 40px; height: 20px; margin: 5px;"></div> <p>Serial Number</p> <div style="border: 1px solid black; width: 40px; height: 20px; margin: 5px;"></div>			<p>FAILURE ORIGIN</p> <p align="center">Date of Manufacture</p> <p align="center">Month Year</p> <p align="center">Axle Grade</p> <p align="center">U/G/F/H</p> <p>Surface Damage <input type="checkbox"/></p> <p>Internal Damage <input type="checkbox"/></p>																
<p>DID FAILURE CAUSE DERAILMENT</p> <p>Y—Yes <input type="checkbox"/></p> <p>N—No <input type="checkbox"/></p>	<p>RAILROAD REPORTING MARKS</p> <div style="border: 1px solid black; width: 40px; height: 20px; margin: 5px;"></div>	<p>JOURNAL REPAIR (V) INFORMATION (if present)</p> <p>V <input type="checkbox"/></p> <p>V <input type="checkbox"/></p>	<p>FOR JOURNAL FRACTURE: Was V Information On?</p> <p>Failed End <input type="checkbox"/></p> <p>Opposite End <input type="checkbox"/></p>																
 <p>No. 2—Black Collar—Roller Bearing</p>  <p>No. 4—Roller Bearing—Raised Wheel Seat</p>  <p>No. 5—Locomotive Axle with Axle Gear</p>																			
<p>Nearest City of Failure: _____</p>			<p>Date: _____</p>																
<p>Name of Person Completing Report: _____</p> <p>Title: _____</p> <p>Address: _____</p>			<p>Mail to: WABL Committee Manager Association of American Railroads 55000 DOT Road Pueblo CO 81001 Phone: 719-584-0670 Fax: 719-585-1895</p>																

IMPLEMENTED 04/2019

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Paragraph 3.1.1

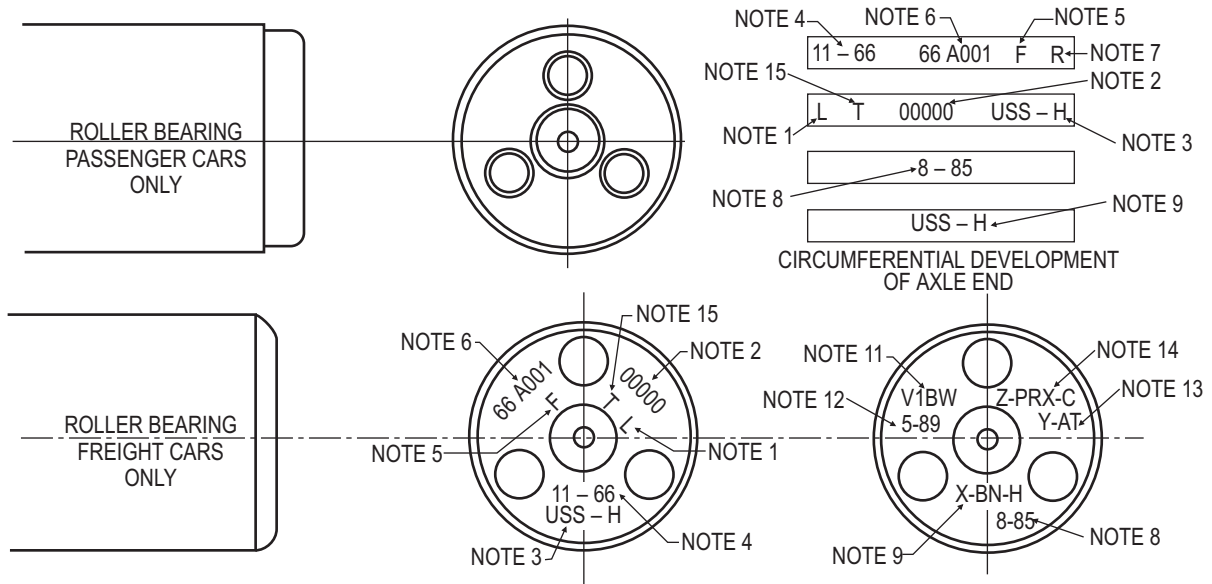
Fig. 4.78

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NOTES:

1. LABORATORY ACCEPTANCE STAMP—FOR USE BY PURCHASER TO SIGNIFY ACCEPTANCE OF AXLES SO MARKED PRIOR TO SHIPMENT BY PRODUCER
2. SERIAL NUMBER WHEN SPECIFIED (REQUIRED AFTER 1980)
3. MANUFACTURER NAME OR BRAND (SEE TABLE BELOW)
4. MONTH AND YEAR MADE
5. GRADE OF AXLE:
 F =DOUBLE NORMALIZED AND TEMPERED
 G=QUENCHED AND TEMPERED
 H=NORMALIZED, QUENCHED AND TEMPERED
 U=UNTREATED
6. HEAT NUMBER
7. R = RADIAL UT
8. CONVERSION DATE
9. X (WHEEL SHOP SYMBOL)
10. CONVERTED AXLES MUST BE STAMPED WITH THE CONVERSION DATE (NOTE 8. LOCATION) AND THE LETTER "X" FOLLOWED BY THE WHEEL SHOP SYMBOL (NOTE 9. LOCATION). MANUFACTURER'S PERTINENT INFORMATION MUST BE REAPPLIED TO THE END OF AXLE, IF AVAILABLE (NOTE 1 THROUGH NOTE 6).
11. AXLES REPAIRED BY SPECIFICATION M-967 PROCESSES MUST BE STAMPED WITH THE LETTER "V" FOLLOWED BY ONE OR TWO SEQUENTIAL NUMBERS IDENTIFYING THE JOURNALS REPAIRED AND BY THE AAR-ASSIGNED IDENTIFYING MARKS (NOTE 11. LOCATION). SEQUENTIAL ODD NUMBERS WILL BE USED TO IDENTIFY JOURNAL REPAIRS AND THE END OF AXLE ON WHICH MARKINGS ARE APPLIED; SEQUENTIAL EVEN NUMBERS WILL BE USED FOR THE OTHER END. FOR EXAMPLE, "V1BW, V23BRX" MEANS JOURNAL AT MARKING END OF AXLE REPAIRED AND FOLLOWED LATER BY BOTH JOURNALS BEING REPAIRED WITH JOURNAL AT MARKING END BEING REPAIRED A SECOND TIME.
12. MONTH AND YEAR REPAIRED
13. SHOPS THAT FINISH-MACHINE NEW AXLES, EXCLUDING WHEEL SEATS, WILL SHOW THE LETTER "Y" FOLLOWED BY THE WHEEL SHOP SYMBOL (NOTE 13. LOCATION). AXLE MANUFACTURERS THAT FINISH-MACHINE AXLES WILL USE THE BRAND SHOWN IN NOTE 3 ABOVE.
14. SHOPS THAT END FACE AXLES PER RULE 1.2.7 WILL SHOW THE LETTER Z FOLLOWED BY THE SHOP SYMBOL (NOTE 14 LOCATION).
15. LETTER "T" STAMPED ADJACENT TO THE HEAT NUMBER OR THE SERIAL NUMBER. AXLE HAS BEEN ULTRASONICALLY INSPECTED BY THE MANUFACTURER (STAMPING NOT REQUIRED AFTER 1980).

GENERAL NOTES:

- ALL MARKS WILL BE DEEPLY AND LEGIBLY STAMPED WITH CHARACTERS NOT LESS THAN 1/4 IN. HIGH.
- MANUFACTURER MUST FINISH TURN ONE END OF THE AXLE FOR STAMPING.
- ALL ELEVATIONS OR IRREGULARITIES SHOULD BE FILED OR GROUND AFTER STAMPING.
- THE ABOVE ARE THE MINIMUM MARKING REQUIREMENTS, BUT THE LOCATIONS OR INDIVIDUAL ITEMS MAY VARY FROM THOSE ILLUSTRATED.
- FOR MARKING AMTRAK INBOARD ROLLER BEARING PASSENGER CAR AXLES, SEE FIG. 4.12.
- MARKINGS ILLUSTRATED IN THE FIGURE FOR ROLLER BEARING AXLES FOR FREIGHT CARS SHOW MARKINGS THAT MAY BE ON EITHER NEW OR OLD AXLES, DEPENDING ON REQUIREMENTS IN EFFECT AT THE TIME THE MARKINGS WERE APPLIED.

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Fig. 4.78 (Continued)

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AXIS	Axis LLC	Paragould AR
BF	Bumar-Fablock S.A.	Chrzanow, Poland
BS ^{a/}	Bethlehem Steel Corporation	Johnstown, PA
BT-BED	Bahntechnik Brand-Erbisdorf (BBE)	Brand-Erbisdorf, Germany
CAF	Construcciones y Auxiliars de Ferrocarriles (CAF)	Beasain, Spain
CB ^{a/}	Cobrasma	Brazil
CCC	CNR Changchun Railway Vehicle Facilities Co.,Ltd.	Jilin Province, China
CF	Valdunes (formerly Creusot-Loire)	Dunkerque, France
CSGR	Shanxi Guorui Rail Vehicle Equipment Company Limited	Jiaocheng, Shanxi Province, PRC
CHB	Baotou	Baotou Inner Mongolia PRC
CHT	Jinxi Axle Company LTD. (Formerly Norinco Jinxi)	Taiyuan, Shanxi Province, PRC
CSR	CSR Yangtse Rolling Stock Co. Ltd.	Tongling City, Anhui Province PRC
DDAP	DDAP/RAX	Dneprdzerzhinsk, Ukraine
DEL	CNR Datong Electric Locomotive CO., LTD	Datong, Shanxi Province, PRC
DSS	JSC Dneprospsstal, Zaporozhye (DSS)	Zaporozhye, Ukraine
HM	Huta Gliwice-Osie Sp. zo.o	Gliwice, Poland
JAW	Standard Forged Products	Johnstown, PA
KW ^{a/}	Klockner	West Germany
L	Lucchini Sidermeccanica SpA (Formerly Terni)	Lovere, Italy
LCKZ	LugCentroKuZ	Lugansk, Ukraine
LP	Huta L. W. (Formerly Lucchini Poland)	Warsaw, Poland
MK ^{a/}	Makrotek	Mexico
MRF	Standard Forged Products	McKees Rocks, Pennsylvania

MW	MWL Rodas & Eixos LTDA (Formerly Mafersa)	Cacapavz, Sao Paulo, Brazil
OSW	Nippon Steel & Sumitomo Metal Corporation	Osaka, Japan
QRRS	Qiqihar Railway Rolling Stock Ltd	Qiqihar, PRC
RW	S. C. SMR S.A.	Bals, Romania
SCOT ^{a/}	Scot Forge	Clinton, Wisconsin
SFC or S ^{a/}	Standard Forgings	
SMI	Sumitomo Metal Industries LTD.	Osaka, Japan
SPT ^{a/}	British Steel	Templeborough Works, England
SSD	Standard Steel LLC.	Burnham, Pennsylvania
SW	SWASAP Works	Germiston, South Africa
T ^{a/}	British Steel	Trafford Park Works, England
THM or TZ	Taiyuan Heavy Industry Railway Transit Equipment Co., Ltd.	Taiyuan City, Shanxi Province, PRC
TW plus ^{a/}	Hawker Siddeley	Trenton Canada
TY	Taiyuan Heavy Industry Railway Transit Equipment Co., Ltd.	Taiyuan, Shanxi Province, PRC
UF	Ural Forge	Chebarkul, Russia
USS-F ^{a/}	United States Steel Corp.	Fairfield Works
USS-G ^{a/}	United States Steel Corp.	Gary Works
USS-H ^{a/}	United States Steel Corp.	Homestead Works
V	Valdunes (formerly Creusot-Loire)	Valenciennes, France
WAP	Rail Wheel Factory Indian Railways (Formerly Wheel and Axle Plant)	Yelahanka, Bagalore, India
ZB	Bonatrans a.s. (Formerly ZAD)	Bohumin, Czech Republic

^{a/} No longer in production

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Fig. 4.78 (Concluded)

IMPLEMENTED 04/2019