

TABLE 27. ACCIDENTS INVOLVING CONSISTS TRANSPORTING HAZARDOUS MATERIALS, BY CAUSE, 1993

Cause	Cars				Releasing Hazmat	People Evacuated	Damage To Equipment
	Consists Carrying	In Consist	Containing Hazmat	Damaged W/Hazmat			
TRACK, ROADBED AND STRUCTURES							
Roadbed defects	9	548	81	8	2	---	625,501
Track geometry defects	83	5,415	710	143	13	46	3,554,350
Rail joint bar and anchoring	53	3,627	551	67	11	352	5,515,005
Frogs, switches and track appliances	58	2,698	337	57	1	---	925,010
Other way and structure	1	78	2	2	---	---	560
Signal and communication failures	5	295	40	3	---	---	201,750
Subtotal.....	209	12,661	1,721	280	27	398	10,822,176
MECHANICAL AND ELECTRICAL FAILURES							
Brakes	8	591	30	5	1	---	114,900
Trailer or container on flat car	1	35	3	---	---	---	8,000
Body	8	524	77	35	15	40	1,180,912
Coupler and draft system	3	284	7	2	---	---	22,750
Truck components	16	1,381	107	7	---	---	1,133,000
Axles and journal bearings	30	2,413	362	26	1	2,500	1,643,077
Wheels	19	1,465	155	18	1	---	1,277,618
Locomotives	1	30	3	---	---	---	40,000
Doors	---	---	---	---	---	---	---
General mechanical and electrical failures	---	---	---	---	---	---	---
Subtotal.....	86	6,723	744	93	18	2,540	5,420,257
TRAIN OPERATION - HUMAN FACTORS							
Brakes, use of	35	1,038	320	40	1	---	1,053,442
Employee physical condition	---	---	---	---	---	---	---
Flagging, fixed, hand and radio signals	4	286	30	---	---	---	227,500
General switching rules	70	3,242	425	63	2	139	1,065,488
Main track authority	8	477	36	1	---	---	1,929,957
Train handling/train make-up	47	4,000	415	50	1	75	2,011,731
Speed	7	359	31	3	---	---	117,600
Switches, use of	32	1,614	297	38	3	---	450,149
Cab signals	---	---	---	---	---	---	---
Miscellaneous	2	225	26	---	---	---	96,600
Subtotal.....	205	11,241	1,580	195	7	214	6,952,467
MISCELLANEOUS FACTORS							
Environmental conditions	5	389	16	5	2	---	1,891,800
Loading procedures	9	625	61	7	---	---	204,600
Highway-rail grade crossing accidents	28	1,718	221	8	1	200	1,103,196
Unusual operational situations	19	1,320	244	19	2	55	563,110
Other miscellaneous	25	1,552	209	53	1	---	4,789,200
Subtotal.....	86	5,604	751	92	6	255	8,551,906
GRAND TOTAL.....	586	36,229	4,796	660	58	3,407	31,746,806

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