

ECP Braking Final Updated RIA Technical Corrections

This document presents technical corrections to the December 2017 regulatory impact analysis (RIA) posted to the PHMSA-2017-0102 docket (see PHMSA-2017-0102-0035) evaluating the deployment of Electronic Pneumatically Controlled (ECP) brakes on high hazard flammable unit trains (HHFUTs). The technical corrections involve Tables E1, E2, 12a, and 12b, located on pages 6, 7, 84 and 85, respectively. All of these summary tables¹ describe the range of safety benefits/damage mitigation resulting from deployment of ECP brakes on HHFUTs. The changes to the figures are non-substantive in that they do not affect the conclusions drawn by the Department with regard to the costs and benefits of ECP brake deployment on HHFUTs.

Table E1, Original

	7 Percent		3 Percent	
	Low	High	Low	High
Total Costs	\$375.6	\$491.7	\$402.1	\$524.1
Total Benefits	\$131.0	\$197.9	\$188.5	\$278.8
Annualized Costs	\$35.5	\$46.4	\$27.0	\$35.2
Annualized Benefits	\$12.4	\$18.7	\$12.7	\$18.7

Table E1, As Corrected

	7 Percent		3 Percent	
	Low	High	Low	High
Total Costs	\$375.6	\$491.7	\$402.1	\$524.1
Total Benefits	\$131.0	\$260.4	\$188.5	\$366.6
Annualized Costs	\$35.5	\$46.4	\$27.0	\$35.2
Annualized Benefits	\$12.4	\$24.6	\$12.7	\$24.6

¹ Tables preceding the summary tables were reexamined and found to be accurate.

Table E2, Original

	7 Percent		3 Percent	
	Low	High	Low	High
Total Costs	\$35.454	\$46.415	\$27.028	\$35.225
Safety Benefits	\$4.546	\$7.381	\$4.516	\$7.356
Business Benefits				
Set Out Reliefs	\$0.554	\$0.703	\$0.554	\$0.709
Class IA Brake Test	\$2.599	\$4.346	\$3.029	\$4.377
Wheel Savings	\$2.527	\$3.531	\$2.425	\$3.556
Fuel Savings	\$2.143	\$2.723	\$2.144	\$2.743
Total Benefits	\$12.368	\$18.685	\$12.669	\$18.741

Table E2, As Corrected.

	7 Percent		3 Percent	
	Low	High	Low	High
Total Costs	\$35.454	\$46.415	\$27.028	\$35.225
Safety Benefits	\$4.546	\$13.278	\$4.516	\$13.259
Business Benefits				
Set Out Reliefs	\$0.554	\$0.703	\$0.554	\$0.709
Class IA Brake Test	\$2.599	\$4.346	\$3.029	\$4.377
Wheel Savings	\$2.527	\$3.531	\$2.425	\$3.556
Fuel Savings	\$2.143	\$2.723	\$2.144	\$2.743
Total Benefits	\$12.368	\$24,582	\$12.669	\$24.643

Table 12a, Original

	Total		7 Percent		3 Percent	
	Low	High	Low	High	Low	High
Tank Cars	\$274,482,088	\$364,480,686	\$237,755,215	\$318,492,228	\$256,181,453	\$341,523,970
Locomotives	\$115,668,000	\$153,252,000	\$105,033,048	\$140,417,816	\$110,789,180	\$147,387,381
Asset Management	\$522,480	\$522,480	\$522,480	\$522,480	\$522,480	\$522,480
Training	\$36,577,918	\$36,577,918	\$32,288,700	\$32,288,700	\$34,621,159	\$34,621,159
Total Costs	\$427,250,486	\$554,833,084	\$375,599,443	\$491,721,224	\$402,114,272	\$524,054,990
Damage Mitigation	\$89,515,934	\$146,156,247	\$48,157,055	\$78,191,951	\$67,192,298	\$109,438,651
Set Out Reliefs	\$11,036,691	\$14,184,160	\$5,866,449	\$7,456,676	\$8,244,345	\$10,546,366
Class IA Brake Test	\$67,896,247	\$87,577,085	\$27,538,841	\$46,041,344	\$45,066,398	\$65,116,955
Wheel Savings	\$46,388,791	\$71,149,794	\$26,768,129	\$37,403,763	\$36,082,659	\$52,902,094
Fuel Savings	\$42,704,811	\$54,883,469	\$22,699,341	\$28,852,484	\$31,900,250	\$40,807,573
Total Benefits	\$257,542,474	\$373,950,755	\$131,029,815	\$197,946,218	\$188,485,950	\$278,811,639

Table 12a, As Corrected

	Total		7 Percent		3 Percent	
	Low	High	Low	High	Low	High
Tank Cars	\$274,482,088	\$364,480,686	\$237,755,215	\$318,492,228	\$256,181,453	\$341,523,970
Locomotives	\$115,668,000	\$153,252,000	\$105,033,048	\$140,417,816	\$110,789,180	\$147,387,381
Asset Management	\$522,480	\$522,480	\$522,480	\$522,480	\$522,480	\$522,480
Training	\$36,577,918	\$36,577,918	\$32,288,700	\$32,288,700	\$34,621,159	\$34,621,159
Total Costs	\$427,250,486	\$554,833,084	\$375,599,443	\$491,721,224	\$402,114,272	\$524,054,990
Damage Mitigation	\$89,515,934	\$263,786,706	\$48,157,055	\$140,664,021	\$67,192,298	\$197,256,196
Set Out Reliefs	\$11,036,691	\$14,184,160	\$5,866,449	\$7,456,676	\$8,244,345	\$10,546,366
Class IA Brake Test	\$67,896,247	\$87,577,085	\$27,538,841	\$46,041,344	\$45,066,398	\$65,116,955
Wheel Savings	\$46,388,791	\$71,149,794	\$26,768,129	\$37,403,763	\$36,082,659	\$52,902,094
Fuel Savings	\$42,704,811	\$54,883,469	\$22,699,341	\$28,852,484	\$31,900,250	\$40,807,573
Total Benefits	\$257,542,474	\$491,581,214	\$131,029,815	\$260,418,288	\$188,485,950	\$366,629,184

Table 12b, Original

	7 Percent		3 Percent	
	Low	High	Low	High
Annualized Costs	\$35,453,930	\$46,415,005	\$27,028,395	\$35,224,727
Annualized Benefits	\$12,368,288	\$18,684,723	\$12,669,216	\$18,740,522

Table 12b, As Corrected

	7 Percent		3 Percent	
	Low	High	Low	High
Annualized Costs	\$35,453,930	\$46,415,005	\$27,028,395	\$35,224,727
Annualized Benefits	\$12,368,288	\$24,581,644	\$12,669,216	\$24,643,240

Also, note that the reference to Table 10.2e on page 62 was in error.