



Rail Integrity Task Force

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Track Division
FRA Office of Safety**



Origins

- **Convened in April 2002 to address increase in broken rail derailments**
- **Members include representatives from:**
 - **FRA**
 - **Volpe Center**
 - **AAR**
 - **CNRC**
 - **TTCI**
 - **BNSF**
 - **CSX**
 - **NS**
 - **UP**
 - **CN**
 - **CPR**

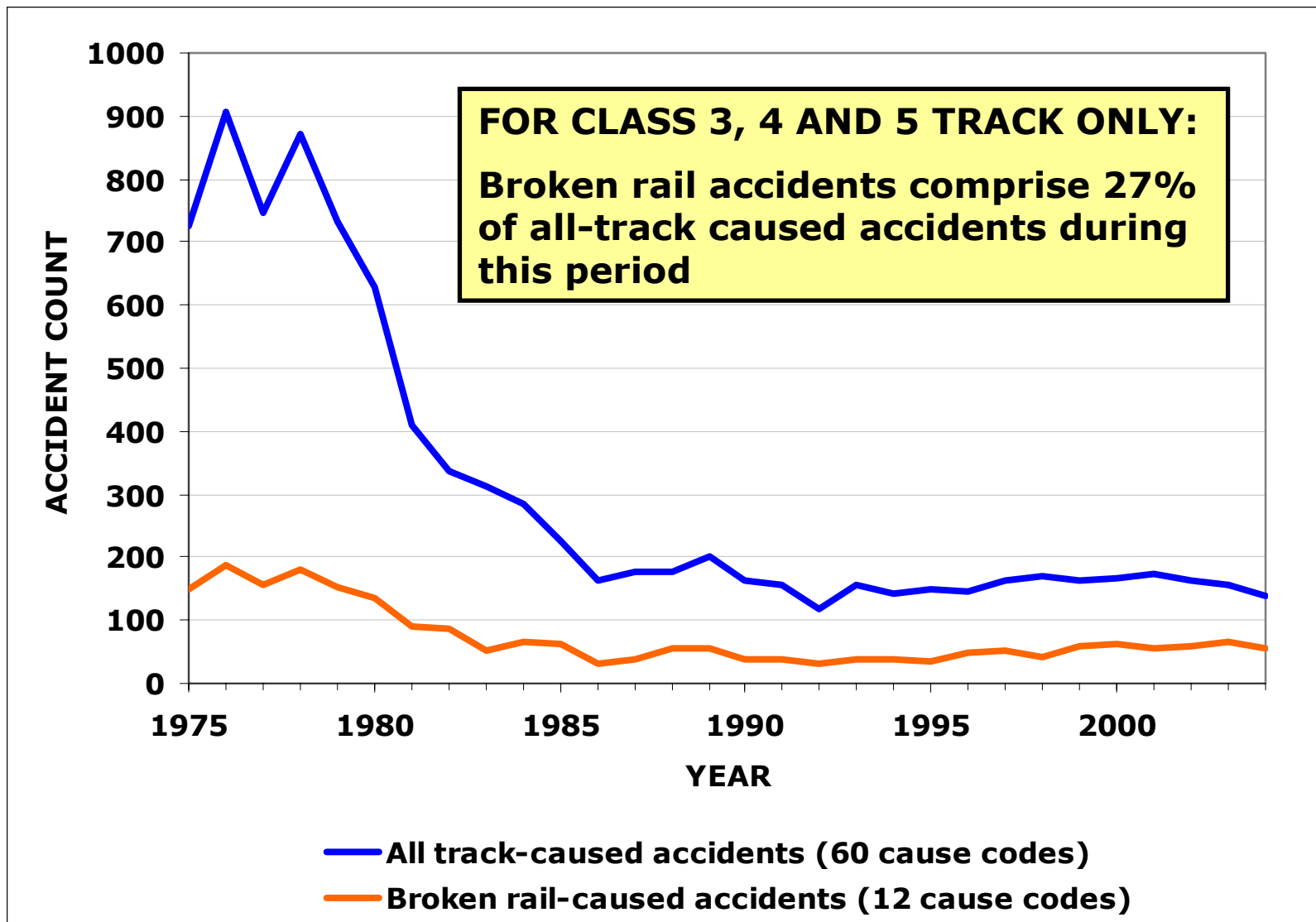


Charter

- **Goal is to reduce harm resulting from broken rail derailments**
- **Objectives:**
 - **Understand recent increase in broken rail derailments**
 - **Identify candidate explanations**
 - **Review existing best practices**
 - **Update 1994 audit**
 - **Share results of ongoing corroboration**



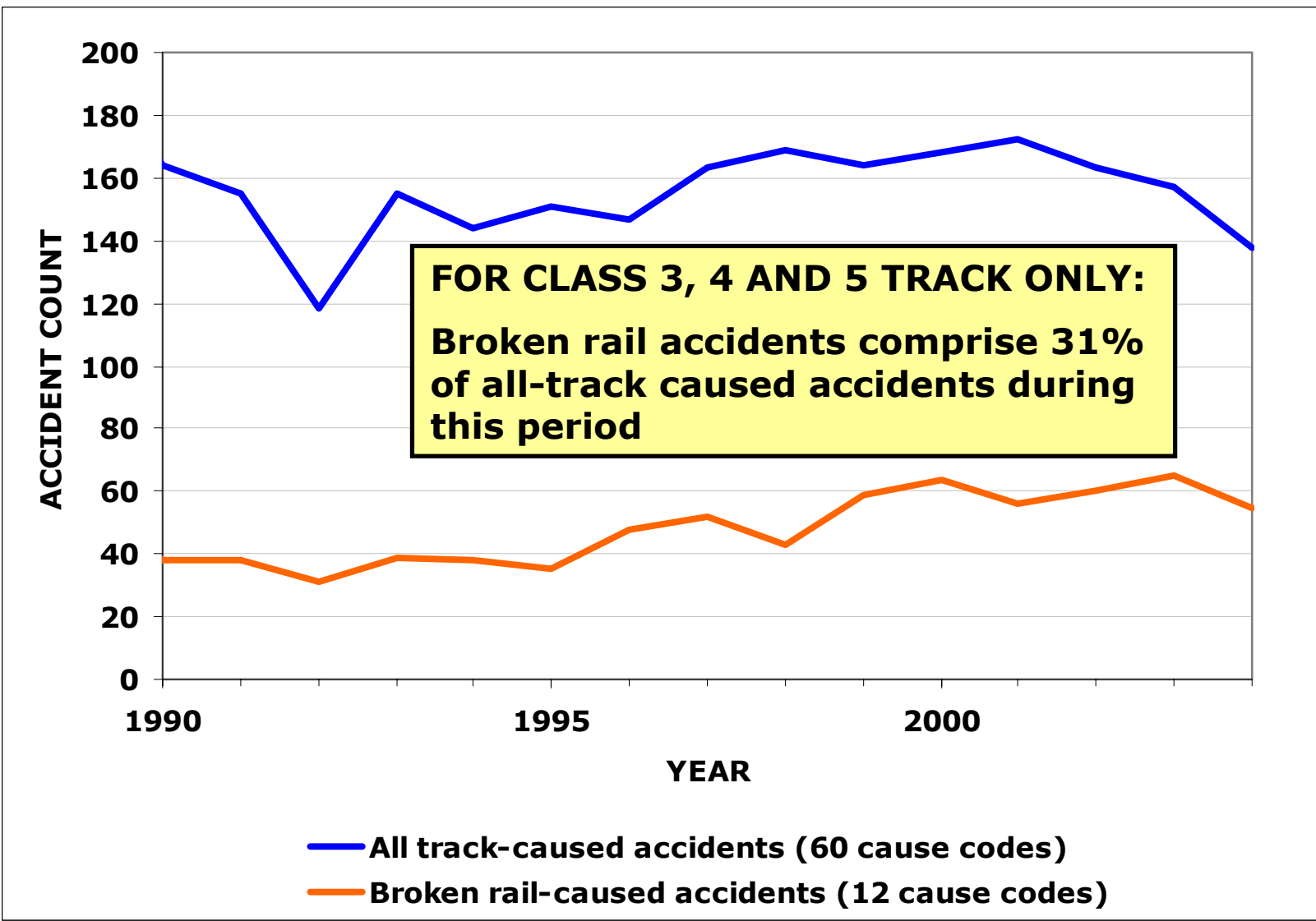
Accidents: 1975-2004



Source: FRA Railroad Accident/Incident Reporting System



Accidents: 1990-2004



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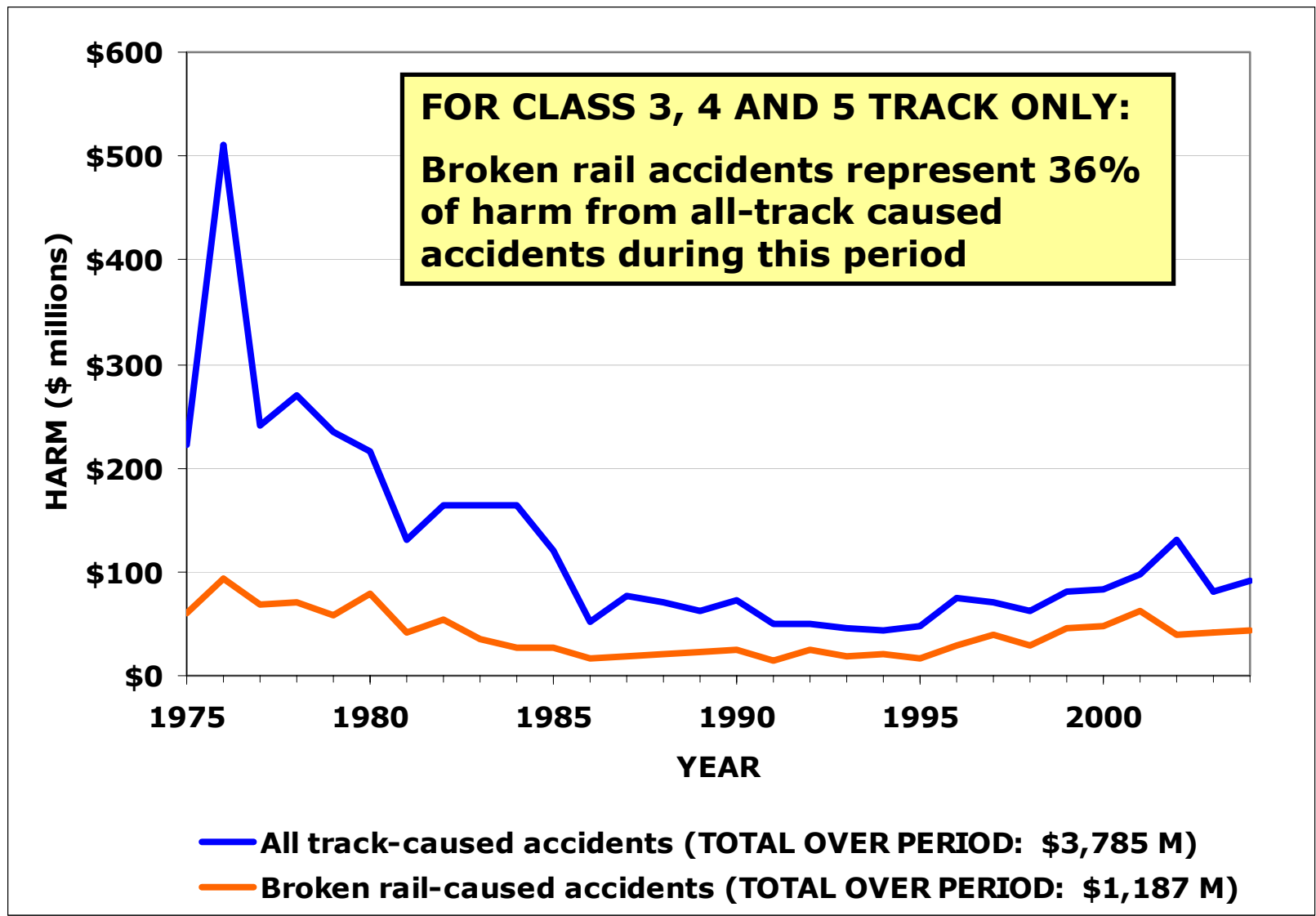
"Harm" derivation

Fatalities:	\$3M each
Injuries*:	\$507k for serious \$36k for non-serious
Evacuees:	\$500 each
Property and equipment damage:	As reported

** Injuries assumed to be 50% serious and 50% non-serious (avg. \$271.5k each)*



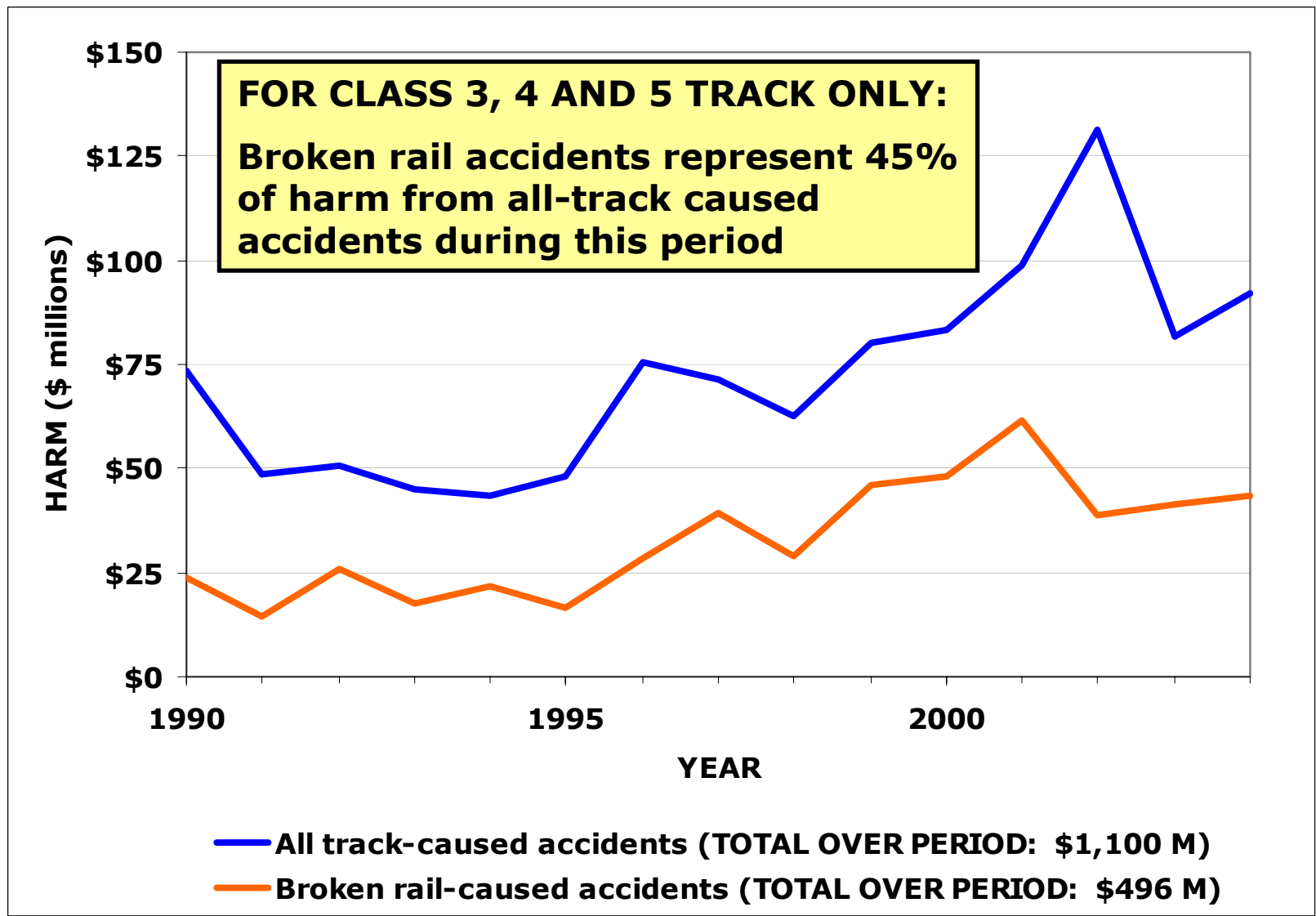
Harm: 1975-2004*



* All costs expressed in constant 2004 dollars



Harm: 1990-2004*



* All costs expressed in constant 2004 dollars



Format

- **Members participate voluntarily**
- **Floor is open for any and all comment**
- **Meetings chaired by FRA Office of Safety**
- **Cooperation is encouraged**



Accomplishments

- **With railroad participation, collected data on non-accident broken rail occurrences and railroads' inspection strategies**
- **Determined that most broken rail derailments are due to certain internal railhead defects which can be difficult to detect reliably**
- **Further study focused on this subset of rail defects**
- **Developed first draft of updated report on railroads' performance in rail defect management (1994 audit)**



Accomplishments (cont'd)

- **Held meetings with participation of rail inspection service providers to ensure that all facets of rail defect management were investigated**
- **Developed computer programs for distribution to the railroads to assist them in establishing rational inspection intervals and asset management**
- **Reviewed railroads' practices regarding use of plug rails and inspection of joint bars**
- **Investigated effects wheel impact (dynamic) loads on rail defect growth using railroad-supplied data**



Accomplishments (cont'd)

- **Developed reporting scheme for use by railroads and FRA field staff to obtain additional accident details not currently required by FRA regulations**
- **Helped refine specifications for FRA's R&D project to develop and test a "smart" (pre-instrumented) rail plug to monitor rail longitudinal force**
- **Considered strengths and weaknesses of current inspection technologies and steps to improve detector car utilization**
- **Discussed railroads' requirements for qualification and certification of detector car operators**



Accomplishments (cont'd)

- **Considered safety benefits of various concepts for delayed remedial actions (detect now – repair later)**
- **Evaluated railroad field experience in sizing of defects and comparison with actual defect size**
- **Obtained information on rail defect management procedures outside North America**
- **Discussed railroads' cold weather rail break repair procedures and current NTSB recommendations for inspection of joint bars in CWR**



Accomplishments (cont'd)

- **Solicited input from railroads on areas upon which to focus FRA's R&D efforts**
- **Developed strawman outline of "best practices" for successful rail defect management**



Selected “best practices”

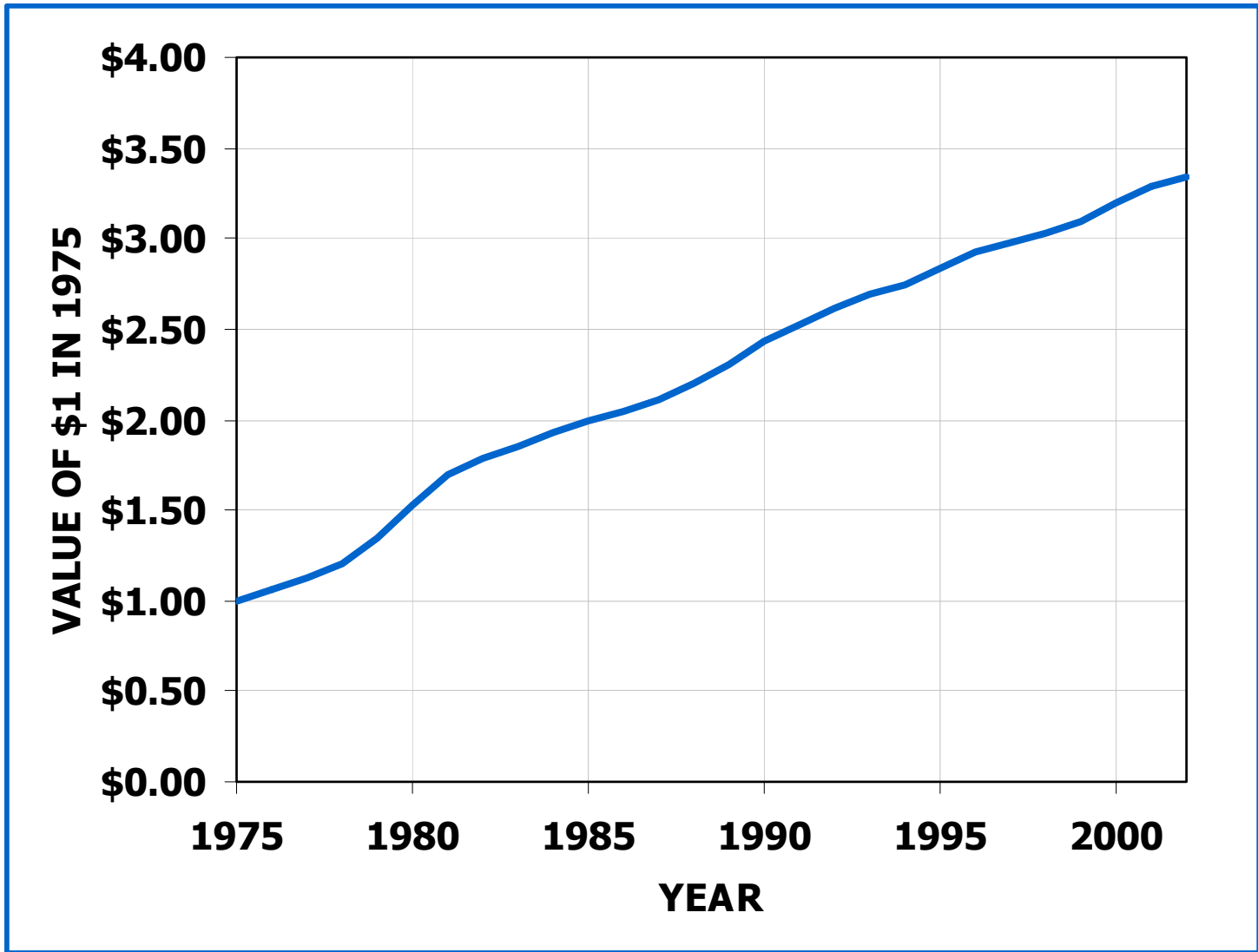
Railroads should:

- **follow-up on missed detections aggressively to maintain confidence in inspection quality**
- **adopt procedures for adjustment of rail inspection frequencies based on observed defect rates and seasonal effects**
- **consider qualification criteria for inspection systems (technology) as well as operators**

Other issues and options are still under consideration



Time value of \$1



Data obtained from consumer price indices for all major expenditure class items:
<http://woodrow.mpls.frb.fed.us/research/data/us/calc/>