

CARD #05

WHAT CAUSES DERAILMENTS?

- Train breaks apart [UDE's + other]
- Soil Slides before or during passing train
- Ocean lapping weakens rail bed
- Mechanical issues alone or with other

DETAIL SCRIPT FOR #05

WHAT CAUSES DERAILMENTS?

Trains do in fact break apart as a result of undesired emergencies [UDE's] as explained on the previous card #4. Although a UDE does not always result in a train breaking apart, this is becoming more prevalent as trains get longer, heavier, and more frequent. Complicating factors include but are not limited to steep slope of rail bed, nearby traffic on double tracks, soil or other spillage on tracks, mechanical issues, and/or human errors.

Soil Slides of the steep hillside on the west side of the Peninsula facing the ocean, are becoming more frequent and have been documented on the previous slide. A slide that occurs before a train reaches that section, may be detected soon enough that the train safely stops; in a worst case scenario, the slide occurs while the train passes, often derailing the train; a good example is the 2012 Everett WA derailment featured on the video down to the left.

Ocean lapping over rail beds seldom occurred in years past; more recently, ocean level rise is making this a reality. This can manifest itself in direct weakening of rail beds, or in weakening of railway support structures like bridges. Failure to continuously monitor these situations may result in unexpected disastrous results. Clearly the underlying rail bed or bridge bed soil structure will dictate in each situation, and geotechnical reports would be required for each situation. For our present shoreline rail line, it has been reported that ocean waters lap the rails, in storms, in areas N of Crescent Beach. For a controversial article about similar problem in the NE of the USA, see NE Ocean link ...

Mechanical issues alone or with one of the above discussed factors, can and do cause derailments. Clearly railways in NA make every effort to keep their capital stock in good running order. Clearly also, not all mechanical issues are detected, and a mechanical malfunction can cause havoc and possible derailment. We direct the reader to the Transportation Safety Board website for live examples and concerns.