



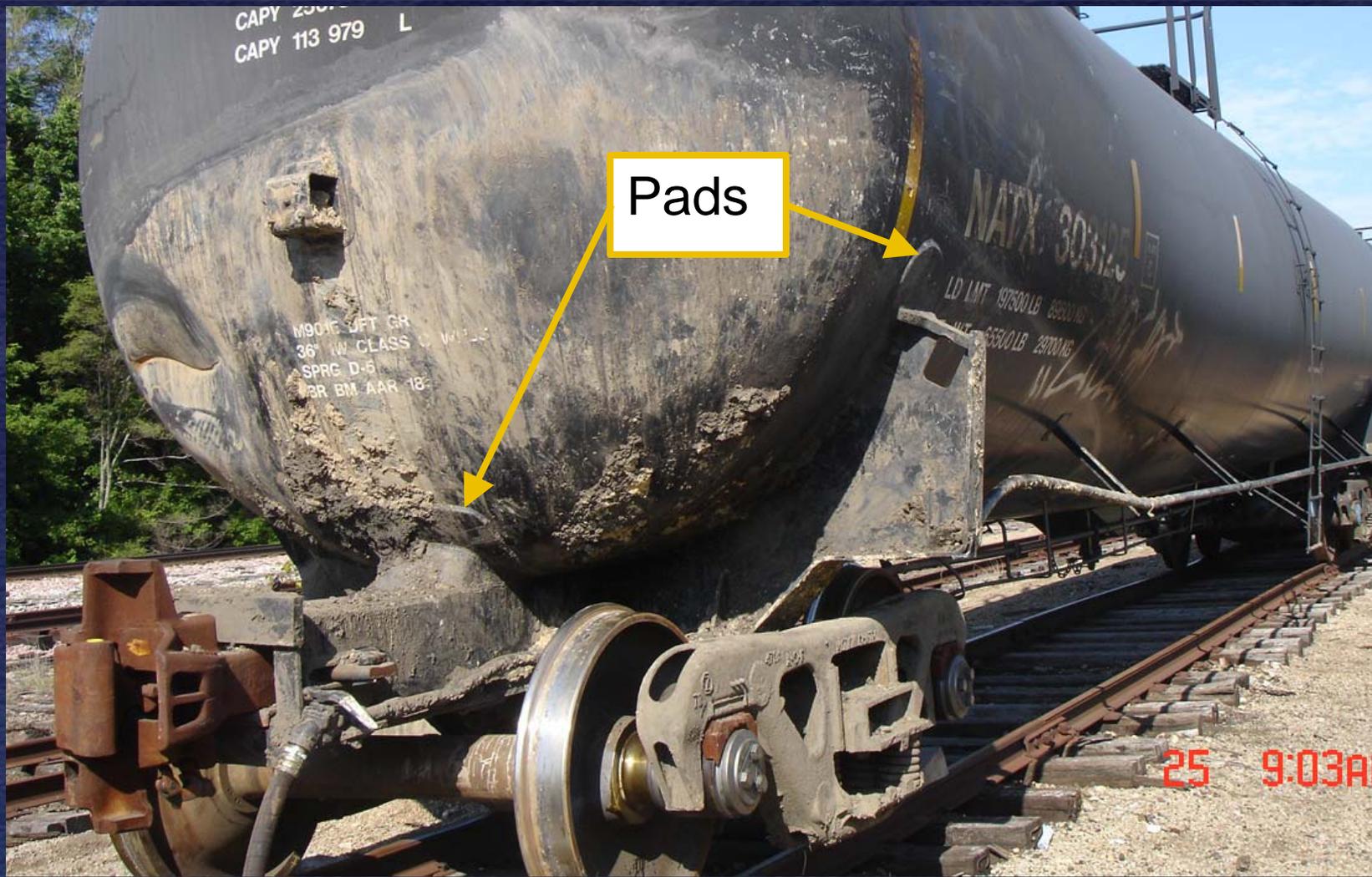
NTSB National Transportation Safety Board

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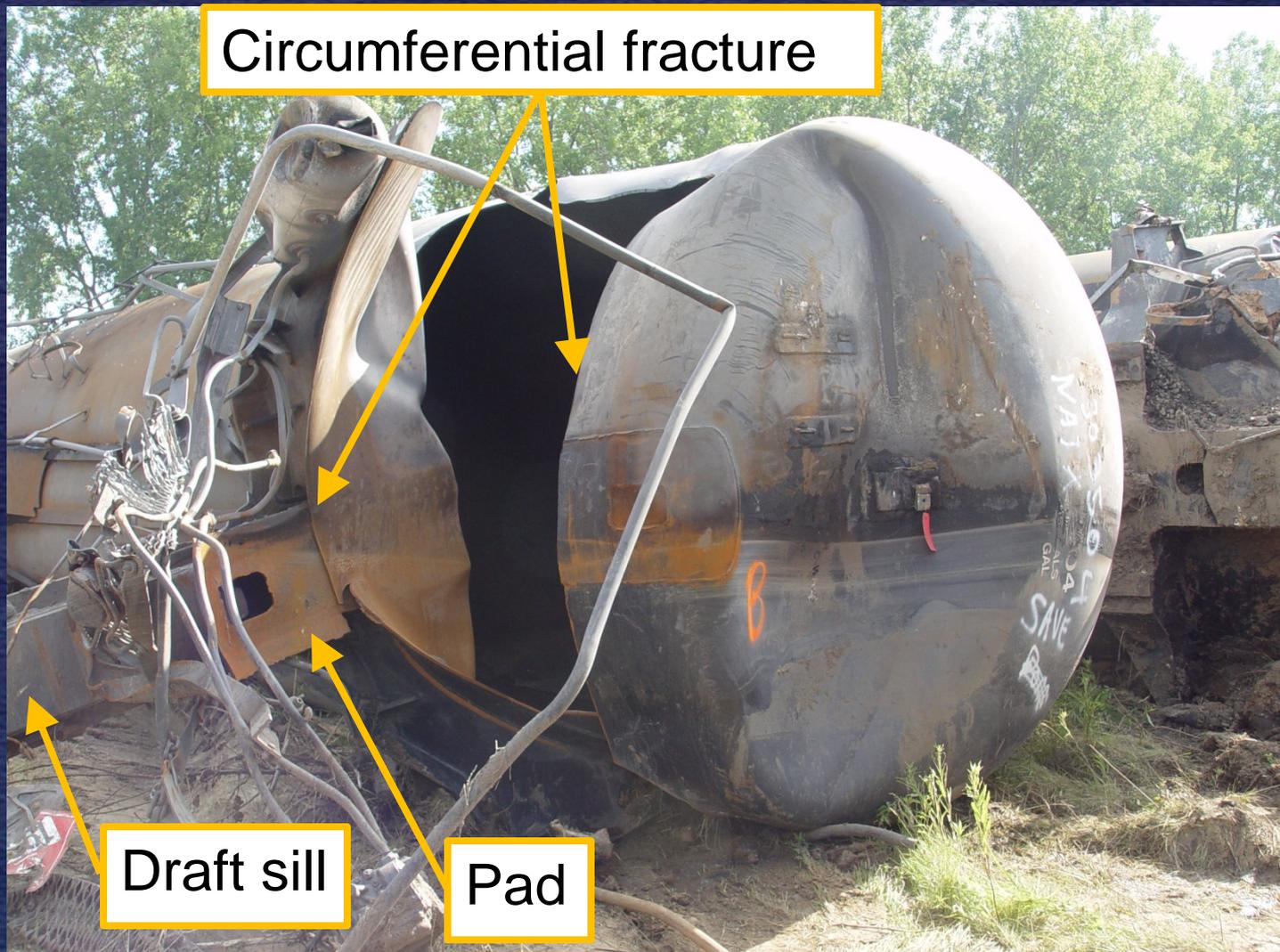
Tank Car Design: Draft Sills and Pads

Matthew R. Fox, Ph.D.

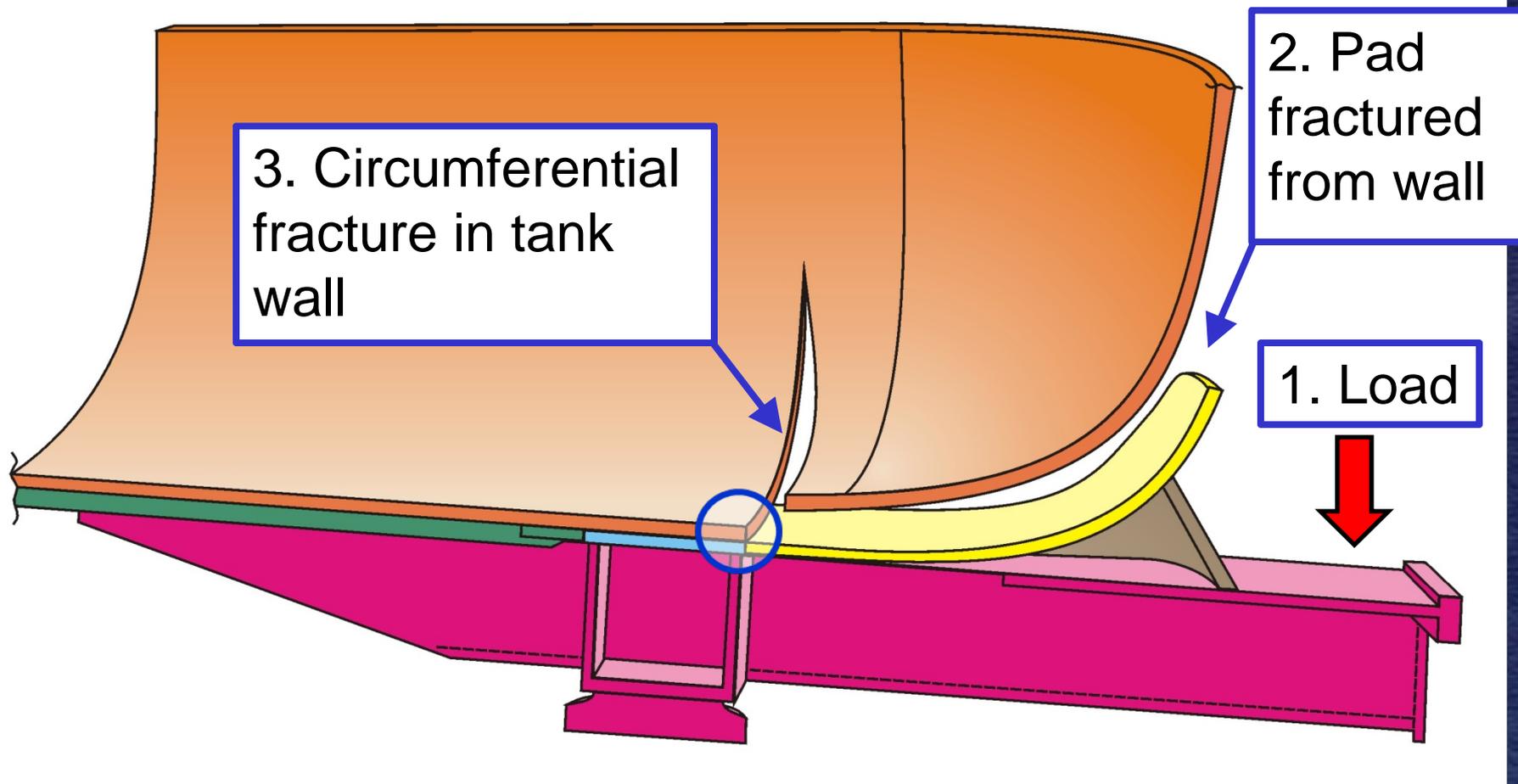
Tank Car Components



Tank Car NATX 303504



Fracture Sequence



*Drawing not to scale

Industry Standards

- Draft sill and pad attachments conformed to industry standards.
- Configuration of draft sill attachments puts tank at risk of substantial breach from downward loading of draft sill.
- Industry standards for draft sill attachments do not ensure designs that protect tank wall integrity.



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