CTA Responds to 7/11/06 Derailment

Chicago Transit Authority
July 11, 2006: Northbound Blue Line train derailed between Clark/Lake station and Grand Station

Cause: deteriorated ties plates, which resulted in a condition known as “wide gage”

WIDE GAGE:
The distance between the rails is greater than the required distance for the appropriate track speed.
Derailment Investigations

Several investigations occurred looking for direct cause and contributing factors:

- National Transportation Safety Board Factual Report
- CTA’s Office of Inspector General
- CTA Safety Team

Immediate Proactive Plan Acted On
Change To Address Problems

Three areas:
1. Infrastructure Renewal/Investment
2. Work Structure/Staffing
3. Technology Change
Infrastructure Renewal/Investment

Subway Signage Replaced

- Track marker location, directional and emergency exit signs installed in Dearborn and State Street subways
Infrastructure Renewal/Investment

Improve Ventilation

- Fan near accident site currently being reconstructed
- Fan use procedures developed for Control Center
Replace Deteriorated Track - Current

- Contractors installed 5,231 new concrete half ties in the Dearborn Subway
  14,000+ ft. of slow zones

- Contractors installing 12,500 concrete half ties in the State Street Subway. Work complete by end of 2007
  8,400+ ft. of slow zones

- Contractor replacing ties on the Brown Line in the Clark Junction Corridor
  2,500+ ft. of slow zones
Infrastructure Renewal/Investment

Replace Deteriorated Track - Current

- Contractor working on grade crossing renewals on the Brown and Yellow lines
  5,582+ ft. of slow zones

- CTA forces replacing ties between Clark Junction and Lawrence
  6,645 ft. of slow zones
Infrastructure Renewal/Investment

Replace Deteriorated Track - Pending

• Finalizing contract to replace 100,000+ ft. of ties and rail on the O’Hare Branch
  87,000+ ft. of slow zones

• Finalizing contract to replace all rail, ties and footwalk in the Loop
  556 ft. of slow zones

• Finalizing contract to replace ties on the Brown Line between Western and Addison
  4,800+ ft. of slow zones
Infrastructure Renewal/Investment

Replace Deteriorated Track - Future

• Advertised contract to replace all remaining wooden ties with concrete in the State Street Subway
  remaining 17,000 ft. of slow zones

• Awaiting proposal to replace ties
  • between Paulina and Southport
    2,062 ft. of slow zones
  • between Belmont and Armitage
    5,244 ft. of slow zones
  • between Belmont and Southport
    5,432 ft. of slow zones
Infrastructure Renewal/Investment

Repair Other Subway Issues

- All subway lighting replaced in Dearborn and State Street subways. Kimball subway completed by end of the year.
- Continue to clean debris from Dearborn and State Street subways
- Continue to grout known leaks in Dearborn and State Street subways
- Subway evacuation maps and telephone directory updated

Safety Issue Addressed
Work Structure & Staffing Changes

Separate Track Inspection and Maintenance Functions

- Reorganized in August

- Increased functions by 42 positions
  - Increased supervision from 1 to 3 positions
  - 42 positions dedicated to track inspections with 3 foremen overseeing work
  - 64 positions dedicated to track maintenance with 6 foremen overseeing work
Work Structure & Staffing Changes

Separate Track Inspection and Maintenance Functions

- All revenue track 10+ years are inspected twice every 7 days
- Inspection areas are reviewed quarterly and adjusted based on productivity
- Safety Department conducts monthly audits to ensure accuracy and quality
- All track inspectors complete inspection refresher training annually
Accountability checks are needed to ensure trackmen are working efficiently

- Trackmen must badge in/out at stations when beginning and completing their work. Quarterly audits are conducted.

- Trackmen must call onto the right-of-way via radio when entering/exiting the system. Records are kept by the Control Center and are audited quarterly.
Technology Change
Handheld technology attached to a centralized database should be used

- 30 handheld units have been purchased with maintenance of way software to conduct inspection and maintenance activities
- Inspections began using these units on August 31, 2007
Technology Changes

Handheld technology attached to a centralized database should be used

- Handheld units are GPS enabled to ensure that defects are being identified and logged at their specific location.
- Units contain defects currently identified so inspectors only have to verify the condition of the defect and add new defects.
Technology Changes

Implement Train tracking system so Control Center can locate trains

- Tracking has been installed and activated on the State, Dan Ryan and O’Hare Subways
- Tracking has also been installed on the Red, Green, Purple, Brown, Pink, Yellow, Orange lines and the Loop
Technology Changes

Train tracking system

- Tracking activated:
  - Blue Line between Jefferson Park and O’Hare
  - Congress Branch between Forest Park and Western Station by end of September

- Remaining Blue Line locations to be on line by end of the year 2009 as part of signal project currently under way
Technology Changes

Testing programs

• In 2006, the entire system was tested for strength and track geometry and all major defects were repaired.

• Advertising for contract to conduct annual testing.

• Board considering a contract for annual ultra sonic testing.
Slow Zones: 2005 – 2007 YTD

Blue Line Subway Derailment
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