Railroad Accident Animation

Collision of Metrolink Passenger Train and
Union Pacific Freight Train
Chatsworth, California
September 12, 2008
DCA08MR009

Description/Disclaimer:

This two-dimensional animation displays the preaccident operations of Metrolink passenger train 111 and Union Pacific freight train LOF 65-12, which collided head on in a curve near Chatsworth, California, on September 12, 2008. This accident reconstruction is based on information obtained from the Metrolink Dispatch Center, wayside signal equipment, locomotive video and event recorders, an assessment of the physical damage to the track, and cell phone records. The accident occurred on track owned and maintained by Metrolink, and approximately 6 miles of track are shown in the animation. The accident occurred in daylight conditions; weather and visibility at the time of the accident are not depicted.

The time-of-day clock at the bottom of the screen is depicted as text, and the clock runs in real time from 4:16:37 p.m. until the accident at 4:22:23 p.m. The legend in the lower left shows the representations for each train, with the Metrolink train in orange and the Union Pacific train in white. The Union Pacific train travels through three different tunnels that are shown as darkened, semi-transparent areas in the animation.

The representations of signals shown in this animation are only the signals visible to each train that govern the operation of that train. There are other signals in the area that are not shown in this animation. As a train passes a signal and enters the block, the signal turns red. Refer to the *Signals Group Factual Report* for complete signal locations and time history.

The text boxes in the upper portion of the screen show text messages sent and received during the timeframe of the animation. The times at which cell phone text

messages appear are the times at which the messages were recorded at the phone service provider's network. There is a time delay between the time recorded and the time a message is actually sent or received on the phone.

All recorded data and physical evidence in this accident are consistent with the Metrolink train's failing to stop at the red signal at Topanga and continuing along the main track that was reserved for the Union Pacific train.

This animation is in Windows Media Format. A high quality version is available by request from Records Management. This animation contains audio.

Narration:

1. This animation shows the train movements leading up to the accident that occurred in Chatsworth, California, on September 12, 2008.

2. It is based on data obtained from the Metrolink Dispatch Center, wayside signal equipment, and locomotive video and event recorders, as well as an assessment of the physical damage to the track.

3. In the lower right, you can see the Metrolink train in orange as it approaches the signal at Control Point Bernson.

4. In the upper left, you can see the Union Pacific train in white as it approaches the signal at Control Point Davis.

5. You will note that once a train passes a signal and enters the next block that signal will turn red.

6. The Union Pacific train is traveling about 47 miles per hour as it passes Control Point Davis on a (green) clear signal indication.

7. As the Metrolink train approaches the signal at Bernson, the train is traveling about 68 miles per hour.

8. The Metrolink train engineer correctly calls out “flashing yellow Bernson” over the radio.

9. This signal is an advance approach, which tells the engineer to proceed, and be prepared to stop at the second signal.

10. As the Metrolink train passes the Bernson signal, the engineer begins to reduce the train speed.

11. At this point the Union Pacific train enters a tunnel.

12. Just before the Metrolink train arrives at the Chatsworth station, it passes a solid yellow approach signal at 4:18:41 p.m., which tells the engineer to proceed, and be prepared to stop at the next signal.

13. There is no recording of the engineer calling out this signal or any other signal that follows.

14. By this time, the engineer has reduced the train speed to about 48 miles per hour.

15. The Metrolink train stops at Chatsworth station for about 57 seconds, allowing passengers to exit and board the train.

16. About this time, the Union Pacific train is in a tunnel approaching a double yellow signal 4426.

17. This is an approach diverging indication, which means to proceed, and be prepared to divert off the main track at the next signal, which would be into the siding at Control Point Topanga.

18. At 4:20:07, the Metrolink engineer moves the throttle to the #2 position and releases the train brake.

19. Phone records indicate that the Union Pacific train conductor sends an outgoing text message about the same time that his train passes signal 4426.

20. As the Metrolink train approaches Devonshire Street, the engineer activates the locomotive bell for 42 seconds to warn the public.

21. He also sounds the horn for 11 seconds before reaching the Devonshire Street grade crossing.

22. About 4:21:03, phone records indicate that the Metrolink engineer receives a text message as the train continues to accelerate.

23. Twenty seconds later, the engineer activates the bell for 19 seconds, then sounds the horn for the Chatsworth Street grade crossing.

24. The Metrolink train is now traveling about 52 miles per hour.

25. There is a speed restriction of 40 miles per hour in the upcoming curve.

26. The engineer rapidly moves the throttle from #8 to 5, then 6, then 7, back to 3, and finally to 4.

27. He applies a brake application, and train speed begins to decrease.

28. The Metrolink train passes the signal at Topanga; it is displaying a red stop indication.

29. Phone records show that by 4:22:01 the engineer has sent a text message in response to the message he just received.

30. The Metrolink train operates through the track switch at Topanga, which was lined for the Union Pacific train to enter the siding.

31. At 4:22:23 p.m., the trains collide in a 6-degree curve.

32. The trains were visible to each other in the curve for only about 5 seconds.

33. Event recorder data indicate that there was no braking on the Metrolink train, but the emergency brakes on the Union Pacific train were activated about 2 seconds before the collision.

34. The Metrolink train was traveling about 42 miles per hour and the Union Pacific train was traveling about 41 miles per hour at the time of impact.

35. All recorded data and physical evidence in this accident are consistent with the Metrolink train failing to stop at the red signal at Topanga and continuing along the main track that was reserved for the Union Pacific train.