

BEFORE THE OFFICE OF THE COMMISSIONER OF RAILROADS

STATE OF WISCONSIN

On the Commissioner's Own Motion for a Determination of the Adequacy of Warning Devices at Two Grade Crossings of the Wisconsin Central Ltd. and the Wisconsin & Southern Railroad Co. Tracks with Slinger Road and Fond du Lac Drive in the Town of Polk, Washington County

9005-RX-84

FINDINGS OF FACT AND ORDER

The Commissioner of Railroads directed the staff of the Office of the Commissioner of Railroads (OCR) to investigate the adequacy of warning devices under §195.28, Stats., at the grade crossings of the Wisconsin Central Ltd. (WCL) and Wisconsin & Southern Railroad Co. (WSOR) tracks with Slinger Road (Crossing No. WCL 692 285X - WSOR 387 009G) and Fond du Lac Drive (Crossing No. WCL 692 278M - WSOR 387 004X) in the Town of Polk, Washington County.

This order only addresses the Fond du Lac Drive crossings. An OCR order previously addressed the Slinger Road crossings.

An OCR investigator inspected the crossings in 2002. A DOT railroad safety engineer inspected the crossings in August 2004 and October 2008. No hearing was held.

Findings of Fact

THE COMMISSIONER FINDS:

**Fond du Lac Drive (Crossing Nos. WCL 692278M, WSOR 387004X)**

Fond du Lac Drive crosses both the Wisconsin Central Ltd. and Wisconsin & Southern Railroad Co. main line tracks. The crossings are presently treated as separate crossings for the purpose of warning devices. The tracks are about 120' apart. There is about 65' of storage space between the tracks. The north turnout of the Rugby Junction siding is located about 285' south of the crossing on the Wisconsin Central Ltd. (WCL) track.

There is a rather sharp curve in both tracks beginning about 400' north of the highway. The tracks in the curve area are in a "cut" approximately 4-7' deep.

Fond du Lac Drive is a 22' wide asphalt roadway with gravel/grass shoulders 2-4' wide in the crossing vicinity and intersects the railroad tracks at an angle of about 45° as measured in the northwest quadrant. The roadway approaches are essentially level near the crossing.

Fond du Lac Drive carried an Average Daily Traffic (ADT) of 150 in 2002 according to DOT records. The legal speed limit is 45 mph.

The WCL operates 30 through train movements per day over the crossing at a timetable speed of 60 mph. The WSOR operates 2 to 4 train movements per day over the crossing at a timetable speed of 25 mph. Switching operations may also occur due to the nearby Ackerville Yard.

A motorist traveling at 45 mph requires a safe stopping distance of 394' on a level roadway. The crossing is visible from more than 500' for motorists approaching from both directions. Assuming a train speed of 25 mph, a motorist traveling at 45 mph needs to see a train when it is about 370' from the crossing from a point 394' down the highway. However, the presence of faster trains increases the "along-the-tracks" vision distance requirement. With trains operating over this crossing at 60 mph, as on the WCL track, the "along-the-tracks" sight distance requirement increases to 625'.

Sight distance available in each quadrant from the safe stopping distance is 20' in the northeast quadrant, 700' in the southeast quadrant, 500' in the southwest quadrant and 350' in the northwest quadrant. Sight distance is inadequate from the safe stopping distance in 2 out of 4 quadrants at train speeds of 25 mph and is inadequate in 3 out of 4 quadrants at train speeds of 60 mph.

At all crossings, except those with gates, a driver stopped 15' short of the near rail must be able to see far enough down the track, in both directions, to determine if sufficient time exists for moving their vehicle safely across the tracks to a point 15' past the far rail, prior to the arrival of a train. Required clearing sight distance along both directions of the track, from the stopped position of the vehicle, is dependent upon the maximum train speed and the acceleration characteristics of the "design" vehicle. The necessary clearing sight distance at the Fond du Lac Drive crossing is 1345' for the WCL track and 675' for the WSOR track. The available clearing sight distance is inadequate in all quadrants.

The exposure factor at this crossing is 5400, assuming an ADT of 150 and a total of 36 train movements per day (32 on the WCL and 4 on the WSOR). This factor will increase as development continues in the area and rail freight traffic continues to rise. Automatic gates and flashing lights are needed to provide adequate protection to motorists using this crossing.

One train-vehicle accident has occurred at this crossing since 1973.

The Wisconsin Department of Transportation has produced a benefit-cost analysis for all at-grade crossings in the state. Installing new automatic flashing lights with gates and constant warning time circuitry at the Fond du Lac Drive crossing has a net benefit of about \$903,500 for a combined two-tracks crossing.

Accidents that do occur here will likely be quite serious if a through train is involved due to their 60 mph speed. Train speed is strongly correlated with fatalities in train/vehicle accidents. More specifically, crossings with train speeds of 40 mph and over have a disproportionate number of fatalities. According to Federal Railroad Administration (FRA) statistics, nationally, in 1994 71% of fatalities occurred at crossings with train speeds of 40 mph+, even though only 26% of all crossings had train speeds of 40 mph+.

Each crossing presently has reflective crossbucks with back-to-back vertical reflective stripes, highway stop signs and advance warning signs. Each crossing has its own set of two crossbucks and stop signs, requiring a motorist to make two stops while crossing the two tracks. **The stop signs shall be maintained pending installation of the new automatic flashing lights and gates.**

Because of the inadequate clearing sight distances both crossings must have gates. In addition, the presence of two mainline tracks, the possibility that trains could operate simultaneously on each track, and the 60-mph train speed require the installation of gates. The crossings should be treated as a single two-track because of the limited storage space (65') between the two-tracks. In addition, it is more cost-effective to install one set of automatic flashing lights and gates rather than installing a separate set at each crossing.

The WCL has expressed a reluctance to maintain the circuits on the WSOR property. The order requires the WCL to install and maintain the signals, except that the WSOR shall maintain the track circuits on its track.

*Constant warning time circuitry* adjusts for train speed and causes the crossing signals to always operate for the same amount of time before the train reaches the crossing, regardless of train speed. A motion detector simply detects the train operation, but does not adjust for train speed so that the amount of warning time varies based on train speed.

*Light emitting diodes (LED)* are a relatively new application for crossing signals. The LED lamps replace the incandescent bulbs. LEDs have higher conspicuity, a wider cone of vision, and longer life than incandescent lights. LEDs are especially useful on east-west roadways where the rising and setting sun may make the signals difficult to see.

**Source of funding:** The signal materials and installation shall be paid from OCR safety funds.

#### Conclusion on the Issue

THE COMMISSIONER CONCLUDES:

That in order to adequately protect and promote public safety, it is necessary to install and maintain 12" LED automatic flashing lights with gates and constant warning time circuitry at the crossing of the tracks of Wisconsin & Southern Railroad Co. and Wisconsin Central Ltd. with Fond du Lac Drive in the Town of Polk, Washington County.

#### Conclusion of Law

THE COMMISSIONER CONCLUDES:

That the jurisdiction of the Office of the Commissioner of Railroads under §195.28, Stats., extends to this matter. Accordingly, the Office enters an order consistent with the findings of fact.

Order

THE COMMISSIONER ORDERS:

1. That the **Wisconsin Central Ltd.** shall install and maintain 12" LED automatic flashing lights with gates, and constant warning time circuitry with appropriate appurtenances in accordance with such plans as are filed with and approved by the Office of the Commissioner of Railroads at the crossing of its tracks and the Wisconsin & Southern Railroad Co. tracks with **Fond du Lac Drive** at-grade in the Town of Polk, Washington County by **December 31, 2010** (Crossing Nos. WCL 692 278M - WSOR 387 004X). That the **Wisconsin & Southern Railroad Co.** shall maintain the track circuits on its property.

2. That the **Wisconsin Central Ltd.** shall submit to the Office of the Commissioner of Railroads signal and circuit plans with the cost estimate of its proposed installation and upon completion of the signal project, a detailed statement of the actual cost to the Office and to the Wisconsin Department of Transportation.

3. That the **Wisconsin & Southern Railroad Co.** shall submit to the Office of the Commissioner of Railroads signal and circuit plans with the cost estimate of its proposed installation and upon completion of the signal project, a detailed statement of the actual cost to the Office and to the Wisconsin Department of Transportation.

4. That the signal installation work herein ordered shall not begin until the district office of the Wisconsin Department of Transportation informs the railroad that they may start such work and such start notice will not be issued until appropriate federal aid or other funding arrangements have been assured. The cost of the new project initiated before the start notice will not be reimbursed with public funds and shall be the responsibility of the railroad.

5. That neither the Wisconsin Central Ltd. nor the Wisconsin & Southern Railroad Co. shall bear any part of the cost of the crossing signals installation, except for any cost assessed to the railroads pursuant to §195.60, Stats., for the investigation of this matter by the Office. The railroads shall not pass on those assessment costs either directly or indirectly.

6. That if the petitioner, railroad or any interested party objects to this order and requests a hearing within 20 days of the date of this order in writing, the Office will hold a public hearing.

7. That jurisdiction is retained.

Dated at Madison, Wisconsin, (December 2, 2008).

By the Office of the Commissioner of Railroads.

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Roger Breske  
Commissioner of Railroads