

STATE OF ILLINOIS

ILLINOIS COMMERCE COMMISSION

Wisconsin Central LTD., the Village of Mundelein, the County of Lake, and the State of Illinois, Department of Transportation. :
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Stipulated Agreement regarding the installation of an Automated :
Horn System at the Butterfield Road, Illinois Route 60 (IL 60), :
Allanson Road, Hawley Street, Park Street, Maple Street (IL :
Route 176), Dunbar Road, Winchester Road, and Peterson Road :
highway-rail grade crossings of the Wisconsin Central's track, : T01-0029
located in and near the Village of Mundelein, Lake County, :
Illinois, designated as crossings AAR/DOT #689 698N, railroad :
milepost 37.37M; AAR/DOT #689 699V, railroad milepost :
37.50M; AAR/DOT #689 701U, railroad milepost 38.65M; :
AAR/DOT #689 703H, railroad milepost 39.80M; AAR/DOT #689 :
704P, railroad milepost 39.94M; AAR/DOT #689 705W, railroad :
milepost 40.10M; AAR/DOT #689 707K, Railroad milepost :
40.85M; AAR/DOT #689 709Y, railroad milepost 41.78M; and :
AAR/DOT #689 710G, railroad milepost 42.38M, respectively. :

ORDER

By the Commission:

On April 25, 2001, the Illinois Commerce Commission ("Commission") entered its Interim Order in this matter that required, among other things, the Wisconsin Central LTD ("WC" or Canadian National Railroad Company, owner in interest to the Wisconsin Central LTD) to install an Automated Horn System ("AHS") at nine public highway-rail grade crossings in and near the Village of Mundelein ("Village"), Lake County, Illinois. The installations were required to be completed by August 31, 2001. The cost for installation of the automated horn system at the seven grade crossings on the local road system was paid 100% by the Grade Crossing Protection Fund ("GCPF"), with the two grade crossings located on the state system being paid 100% by the Illinois Department of Transportation ("IDOT").

On December 5, 2001, a Supplemental Interim Order was entered by the Commission granting an extension of time to and including December 31, 2001, to the WC within which to complete the automated horn system installation at the nine crossings in the Village of Mundelein. The Supplemental Interim Order further revised the estimates of cost for the installation of the automated horn system, including the cost for the connection to the existing WC warning devices. The increase in cost for the installation of the AHS and connection was divided between the GCPF and IDOT in the same percentage as in the original Interim Order; an increase of \$87,061 to the Fund, and \$29,833 to IDOT.

On March 27, 2002, the Commission entered its Second Supplemental Interim Order granting an additional extension of time to and including May 31, 2002, within which to complete the work as required by the original Interim Order and Supplemental Interim Order, dated April 25, 2001 and December 5, 2001, respectively. WC had installed the AHS at the nine crossings and in early January 2002 began testing of the system in conjunction with the Commission's Rail Safety Section. At the direction of Commission staff, adjustments were required to the horns' microphone placement. WC needed additional time to complete the microphone adjustments and conduct follow-up testing prior to activation of the AHS.

On October 23, 2002, the Commission entered its Third Supplemental Interim Order granting the City an additional six (6) month extension of time to and including April 25, 2003, within which to complete study on the effectiveness of the AHS system that was being conducted by the Northwestern University Center for Public Safety.

On May 7, 2003, the Commission entered its Fourth Supplemental Interim Order approving additional Fund participation in the project cost. The final cost for the AHS project at the nine crossings had increased above the amounts set forth in the original Order and as amended in the Supplemental Interim Order. The Fourth Supplemental Interim Order required the GCPF and IDOT to pay an additional \$41,000 and \$1,000, respectively.

On May 7, 2003, the Commission entered its Amended Fifth Supplemental Interim Order granting the Village a six (6) month extension of time to allow the Village to explore the options available for long-term maintenance of the automated horn system. The Amended Fifth Supplemental Interim Order further stated that in accordance with the Commission's Interim Order dated April 25, 2001, the Village had complied with all the requirements set forth in said Interim Order. Monthly reports on the operation of the AHS system had been properly and timely filed with the Railroad Safety Section staff ("staff"), quarterly meetings of the parties were held to discuss operations, and an evaluation study on the effectiveness of the AHS system has been completed by the Northwestern University Center for Public Safety. Upon the completion of the evaluation study, the final report was distributed in January 2003, to the Commission, the Federal Railroad Association ("FRA"), the Volpe National Transportation Systems Center, the Illinois Department of Transportation, and the Villages of Vernon Hills and Libertyville.

On October 22, 2003, the Commission entered its Sixth Supplemental Order that approved the Maintenance Agreement entered into between Railroad Controls, LTD. and the Village for maintenance of the AHS system. The six (6) month extension of time granted in the Amended Fifth Supplemental Interim Order expired on October 25, 2003. The WC indicated that it would instruct its engineers to start sounding horn warnings on October 25th. In Order to preserve the terms of the Stipulated Agreement and keep the automated horn systems in operation until a decision was made by the FRA and Federal Highway Administration ("FHWA") on whether the AHS would be approved as a Supplemental Safety Measure, Staff requested and was granted by the Commission a twelve (12) month extension of time within which to keep the AHS operating, the train horns quiet, and allow the FRA and FHWA to complete the rulemaking concerning the establishment of railroad quiet zones.

On December 18, 2003, the Federal Railroad Administration (FRA) issued its Interim "Train Horn Rule" (49 CFR Parts 222 and 239 - *Use of Locomotive Horns at Highway-Rail Grade Crossings*). The Interim Train Horn Rule included a provision that permitted use of automated horns pending approval by the Federal Highway Administration (FHWA). On August 2, 2004, FHWA issued a Memorandum granting Interim Approval for the use of automated horn systems as a traffic control device at highway-rail grade crossings.

On October 20, 2004, the Commission entered its Seventh Interim Supplemental Order granting the City and the WC an additional extension of time to and including February 1, 2005, within which to continue the operation of the AHS system until such time as FRA issued the Final Train Horn Rule. On April 27, 2005, the FRA published its Final Train Horn Rule with an effective date of June 24, 2005. The Final Rule included the AHS as an approved Supplemental Safety Measure, since FHWA had issued a Memorandum approving its use.

The City has complied with all terms of the Interim Orders entered in this matter. The study on the experimental automated horn system performed by the Northwestern University Center for Public Safety concluded that "the wayside horn significantly reduces highway-rail crossing violations" and, "it accomplishes this task while improving the quality of life for nearby residents." Based upon the results of the study, and the quarterly reports submitted by the Village, staff is of the opinion that the AHS system has been proven to be an effective and reliable alternative to the need for train crews to sound horn warnings when approaching public highway-rail grade crossings. A final report of the study was released January 2003 to the ICC, FRA, Volpe National Transportation Systems Center, IDOT, Lake County, and the Villages of Vernon Hills and Libertyville.

CN entered into a license agreement with the Village, dated April 3, 2001, in which the CN granted the Village a license to maintain the automated horn system at the nine crossings. The license agreement remains in effect for so long as the Village has maintenance responsibility for the automated horn system at the nine crossings and there continues to be a need for such maintenance. A copy of the license agreement is attached to the final Supplemental Petition as Exhibit A. The Village remains in compliance with all of its obligations under the license agreement and it remains in full force and effect. The Village entered into another one-year agreement with Railroad Controls Limited ("RCL"), dated April 17, 2001, under which the Village retained RCL to provide monthly maintenance services on the automated horn system in effect until a long-term maintenance agreement can be worked out. The one-year agreement was replaced by a three-year agreement dated September 22, 2003. The Village hired RCL because a provision of the Fifth Supplemental Interim Order required the maintainer to be approved by Commission Rail Safety staff and be trained in railroad signal maintenance. RCL met these requirements and was approved by Commission staff. RCL has been maintaining the automated horn system since it was put into operation.

The Final Train Horn Rule (49 CFR Parts 222 and 239 - *Use of Locomotive Horns at Highway-Rail Grade Crossings*), published April 27, 2005, became effective on June 24, 2005. Pertinent parts of Part 222.59 are listed in the following indented paragraphs.

- Part 222.59 (a)(1), a wayside horn conforming to the requirements of appendix E of this part may be used in lieu of a locomotive horn at any highway–rail grade crossing equipped with an active warning system consisting of, at a minimum, flashing lights and gates.
- (a)(2) a wayside horn conforming to the requirements of appendix E of this part may be installed within a quiet zone. For the purpose of calculating the length of a quiet zone, the presence of a wayside horn at a highway-rail crossing within a quiet zone shall be considered in the same manner as a grade crossing treated with an SSM. A grade crossing equipped with a wayside horn shall not be considered in calculating the Quiet Zone Risk Index or Crossing Corridor Risk Index.

Parts (b) and (c) intentionally omitted.

- (d) A railroad operating over a grade crossing equipped with an operational wayside horn installed within a quiet zone pursuant to this section shall cease routine locomotive horn use at the grade crossing. A railroad operating over a grade crossing that is equipped with a wayside horn and located outside of a quiet zone shall cease routine locomotive horn use at the grade crossing on the operational date specified in the notice required by paragraph (c) of this section. (Section (c) pertains to the notification that a wayside horn is being installed

On August 2, 2004, the FHWA issued its Interim Approval for the optional use of the automated horn system (wayside) at highway-rail grade crossings. Interim Approval was granted for the automated horn system (wayside) based upon the FRS's Final Rule, as well as current deployments and evaluations (Mundelein and the Report from the Northwestern University Center for Public Safety included). The document states that train horns are a noise problem for residents living in close proximity to railroad crossings. It further states that to mitigate this problem, the FRA and FHWA Office of Safety have monitored over the past ten (10) years the development and implementation of a wayside horn system ("WHS"), synonymous with automated horn system. The wayside horn system is located at the crossing and directed at oncoming motorists, which (1) simulates the sound and pattern of a train horn; (2) provides similar (or safer) response from road users; and (3) minimizes the audible impact on individuals located near the crossing. And as previously stated in this Order, the FRA published its final rules concerning the use of WHS on June 24, 2005, in the National Register. Interim approval for the WHS is hereby granted based upon FRA's Interim Final Rule, dated June 24, 2005, as well as current deployments and evaluations.

Theory of WHA Operations: The WHS system operates in conjunction with train operations. Under normal conditions at an active crossing, the train's locomotive will normally engage its horn approximately one-quarter of a mile from the crossing. The horn will continue to sound several additional times until the train enters the crossing. The WHS focuses the sound of the horn to the road user, thereby eliminating the requirement that the locomotive sound its horn from such a far distance (currently trains typically sound

their horns a quarter-mile from the crossing.) The WHS is located at the crossing on a pole in close proximity to the crossbuck. Once the train has approached the crossing where the train horn would begin to blow its horn, the WHS is engaged. The WHS emits a digitalized horn sound that is directed in the path of the user. Based upon the location and orientation of the WHS, significant sound abatement is created for the general area surrounding the crossing, and provides a warning to road users approaching the crossing. Additionally, a visual signal is placed along the rail corridor's right-of-way in advance of the crossing to notify the locomotive engineer that the WHS is operating. Pursuant to FRA's Final Rule (49 CFR 222, Appendix E), the locomotive engineer has the right to engage the onboard train horn, when it is determined that it is in the best interest in safety (for both the road user and the train.)

WHS Research Summary: the effectiveness of the WHS has been studied and documented over 10 years at active highway-rail grade crossings, and has shown substantial benefits to such grade crossings. The studies were conducted by agencies/organizations such as the FRA, Volpe Center, Northwestern University, City of Richardson, Texas, Association of American Railroad's, Iowa State University, and the Texas Transportation Institute. Key conclusions of the studies include:

- The studies showed significant reduction (more than 50 percent) in the number of motorists' violations of the crossings gates as compared to the baseline data collected with the train horns sounding.
- The WHS was well accepted by both motorists and locomotive engineers.
- The WHS provides equal or greater audible notification as compared to train horns.
- The WHS provides a good balance between providing adequate advance notification to road users and minimizing community noise levels.
- The WHS appears to continue to be an effective alternative to the locomotive horn.

For future reference, the following FHWA provisions concern the procedure for procuring automated horn systems (wayside):

Option: the wayside horn system may be installed in accordance with Part 222 of title 49 of the Code of Federal Regulations (49 CFR) to provide directional audible warning at highway-rail grade crossings equipped with active traffic control devices consisting of, at a minimum, flashing lights and gates.

Standard: The wayside horn system for use at active highway-rail grade crossings shall conform to the FRA's requirements for the wayside horn prescribed in part 222 of 49 CFR, Appendix E. As a minimum, the wayside horn system shall be installed for each roadway approach to the highway-rail grade crossing to provide audible warning.

Guidance: A diagnostic review should be conducted by a diagnostic team to determine the optimal placement of the wayside horn system and to ensure the correct and most effective use of the system. The diagnostic team should be composed of railroad personnel, public safety or law enforcement, engineering personnel from the public agency with the responsibility for the roadway that crosses the railroad, and other concerned parties. The highway agency or authority with jurisdiction should consider the inclusion of remote health (i.e. status) monitoring capable of automatically notifying maintenance personnel when anomalies have occurred within the system. The wayside horn system should comply with the same lateral clearances and roadside safety features described in the MUCTD Section 8D.01. When a wayside horn is mounted on a separate pole assembly, it should be installed no closer than 4.6m (15 ft.) from the centerline of the nearest track. In addition, a wayside horn should be located where the device will have optimal results, and not obstruct the motorist's line of sight to the flashing-light signals.

Conditions of Approval: Jurisdictions wishing to install the WHS under this Interim Approval must meet the following conditions:

1. The use of WHS shall comply with provisions described in the above provisions for the WHS.
2. A written request shall be submitted to the Director of the Office of Transportation Operations acknowledging the jurisdiction's agreement to comply with MUCTD Section 1A.10, item F. The request must also state the location(s) where the device will be used.
3. Jurisdictions shall be responsible to notify the FRA of the installation of WHS as required in 49 CFR 222, and shall inform the FHWA if such notification in their written request to FHWA for interim approval.

The Village requests that the automated horn system installed as an experimental installation remain in place and operation, but would also like to retain the option of replacing the automated horn system with approved safety measures that would keep locomotives from sounding train horns; or, if a quiet zone can be established in accordance with the FRA final rule with the automated horn system, permit the removal of the automated horn system without additional installations. The Village has complied with all reporting requirements as set forth by the Commission and has complied with all the requirements concerning the hiring of a long term signal maintainer trained in railroad signal maintenance.

On April 27, 2005, the FRA published *49 CFR Parts 222 and 229 Use of Locomotive Horns at Highway-Rail Grade Crossings: Final Rule* in the Federal Register. With the publishing of the final rule pertaining to automated horn systems (wayside) by the FRA, the criteria as set forth in the Commission's Interim Order has been met by the City.

Staff has reviewed the final FRA Train Horn Rule and the Interim FHWA Approval for Use of the Wayside Horn System, both applying to the use of automated horn systems as a replacement for the blowing of train horns through a community and as use a

component of a quiet zone, and has no objection to the criteria of the FRA being incorporated into this Order for reference for requests for future installations.

The Commission, having given due consideration to the entire record herein, finds that:

- 1) The Commission has jurisdiction over the parties and the subject matter of this proceeding;
- 2) The prefatory portion of this Order is true and correct and is hereby adopted as findings of fact;
- 3) Staff recommends that the automated horn system installed as an experimental installation and that is in service at the nine Mundelein locations be retained and remain in operation until such time as there is no longer a railroad signal trained maintainer for maintenance of the system, the Village decides to remove the system on its own volition, or one of the other parties files a Supplemental Petition requesting a hearing on the retention of the automated horn system and the Commission orders the system removed;
- 4) All further requests for the installation of a system of automated horns (wayside) shall meet the requirements of the FRA and FHWA as set forth in the prefatory portion of this Order;
- 5) All other terms and conditions of the original Interim Order, Supplemental Interim Order, Second Supplemental Interim Order, Third Supplemental Interim Order, Fourth Supplemental Interim Order, Amended Fifth Supplemental Interim Order, Sixth Supplemental Interim Order, and Seventh Supplemental Interim Order dated April 25, 2001, December 5, 2001, March 27, 2002, October 23, 2002, May 7, 2003, May 7, 2003, October 22, 2003, and October 20, 2004, respectively, shall remain in full force and effect except as herein modified.

IT IS THEREFORE ORDERED by the Illinois Commerce Commission that retention of the Automated Horn System is hereby approved under the terms and agreements already established in the prefatory portion of this Order and insofar as the terms therein are under the jurisdiction of the Commission.

IT IS FURTHER ORDERED that the AHS systems were installed at the nine location in and near the City of Mundelein as an integral part of the FRA study of the AHS installations and used as examples in the FRA's development of the criteria of usage of the AHS systems in the final rule, and that all crossings in Mundelein are equipped with automatic flashing light signals and gates, that the nine crossings in Mundelein retain the AHS systems under the conditions set forth in the following paragraph.

IT IS FUTHER ORDERED that the Automated Horn System currently installed at the nine crossings of the Canadian National Railroad in and near the City of Mundelein, Lake County, shall remain in place until such time as the Village of Mundelein requests their removal on its own volition or the Federal Railroad Administration quiet zone criteria can be met without the automated horn system being a necessary component.

IT IS FURTHER ORDERED that all future requests for the installation of automated horn systems in lieu of trains sounding horn warnings, shall comply with the provisions set forth in the prefatory portion of this Order by the FRA and FHWA pertaining to the use of automated horn system

IT IS FURTHER ORDERED that all other terms and conditions of the original Interim Order, Supplemental Interim Order, Second Supplemental Interim Order, Third Supplemental Interim Order, Fourth Supplemental Interim Order, Amended Fifth Supplemental Interim Order, Sixth Supplemental Interim Order, and Seventh Supplemental Interim Order, dated April 25, 2001, December 5, 2001, March 27, 2002, October 23, 2002, May 7, 2003, May 7, 2003, October 22, 2003, and October 20, 2004, respectively, are hereby affirmed and shall remain in full force and effect except as herein modified.

IT IS FURTHER ORDERED that, subject to Sections 18c-2201 and 18c-2206 of the Law, this is a final decision of the Commission subject to Administrative Review Law.

By Order of the Commission this 19th day of October 2005.

Martin P. Cohen #2

Chairman

JUDGE
SECTION CHIEF
<i>DWS</i>
ORDERS SUPERVISOR