



NC Department of Transportation
Rail Division

Enhancing North Carolina's Rail Safety Now and Into the 21st Century



*A Report to the
1997 Session of the
North Carolina
General Assembly*

**The North Carolina Department of Transportation's
Railroad Safety Inspection Program and Initiatives**

June 1997

ILROADS DIRECTORY

Independently Owned *continued*

Reporting Mark	Railroad/Address	Contact	Owner/Operator
CFR	CAPE FEAR RAILWAYS Fort Bragg, NC 28307, PO Box 70090	Randolph Mills, Superintendent 910/497-5008, 910/497-9124 FAX	Seaboard Corp., Shawnee Mission, KS Corporate
CLNA	CAROLINA COASTAL RAILWAY Midlothian, VA 23113, One Park W. Circle #203	J.W. Bentz, President Danny Jones, Operations Manager 804/379-4664; 804/379-9521 FAX	Rail Link, Midlothian, VA Corporate
CRUJ	CAROLINA RAIL SERVICES, INC. Raleigh, NC 27604, 3100 Smoketree Ct., Suite 801	Sam A. Holcomb, President 919/790-8244; 919/790-8266 FAX	Carolina Rail Services, Inc. Corporate NC Ports Railway Commission Right of Way
CWCY	CALDWELL COUNTY RAILROAD Morganton, NC 28655, 2114 Williams Wood Dr.	Don McGrady, President 704/433-7409; 704/437-9652 FAX	Caldwell County Economic Development Commission Right of Way
CTR	CLINTON TERMINAL RAILROAD CO. Clinton, NC 28329, PO Box 11	L. Gray Tuttle, President-General Manager 910/596-0844; 910/596-0233 FAX	
DER	DUNN-ERWIN RAILWAY Fayetteville, NC 28302, PO Box 1845	Paul T. McArdle, General Manager 910/483-3543; 910/483-3557 FAX	Aberdeen & Rockfish RR Corporate
GSMR	GREAT SMOKY MOUNTAINS RAILWAY Dillsboro, NC 28725, PO Box 397	Malcom G. MacNeill, President 704/586-8811; 800/872-4681; 704/586-8806 FAX	
LRS	LAURINBURG & SOUTHERN RAILROAD Laurinburg, NC 28353, PO Box 1929	Murphy Evans, President 910/276-0786; 910/276-2853 FAX	
NCDOT	NORTH CAROLINA DEPT. OF TRANSPORTATION Rail Division, Raleigh, NC 27611-5201	Patrick B. Simmons, Director 919/733-4713; 919/733-1391 FAX	Owners Right of Way
NCPRC	NC PORTS RAILWAY COMMISSION Wilmington, NC 28401, 1717 Woodbine St.	William C. Taylor, General Manager 910/762-0916; 910/251-8159 FAX	Owner of Rights of Way
NCRR	NORTH CAROLINA RAILROAD COMPANY Raleigh, NC 27604, 3200 Atlantic Ave., Suite 110	Sam Hunt, President Scott Saylor, Executive VICE PRESIDENT/Staff Counsel 919/954-7601; 919/954-7099 FAX	Owner of Leased Right of Way
NCVA	NORTH CAROLINA & VIRGINIA RAILROAD Ahoskie, NC 27910, 214 N Railroad St.	Carl Hollowell, General Manager 919/332-2778; 919/332-3325 FAX	RailTex, San Antonio, TX Corporate
NCYR	NASH COUNTY RAILROAD Spring Hope, NC 27882, PO Box 487	Pete Claussen, President, Gulf & Ohio Railways Ronnie E. McKenzie, General Manager 919/478-3939; 919/478-7079 FAX	
RSNR	RED SPRINGS & NORTHERN RAILROAD Laurinburg, NC 28353, PO Box 1929	Murphy Evans, President 910/276-0786; 910/276-2853 FAX	Advancement, Inc. Right of Way
TBRY	THERMAL BELT RAILWAY Morganton, NC 28655, 2114 Williams Wood Dr.	Don McGrady, President 704/433-7409; 704/437-9652 FAX	Rutherford RR, Dev. Corp. Right of Way
VSRR	VIRGINIA SOUTHERN RAILROAD Ahoskie, NC 27910, 214 N Railroad St.	Carl Hollowell 919/332-2778; 919/332-3325 FAX 804/736-8862, 804/736-9968	RailTex, San Antonio, TX Corporate
WTRY	WILMINGTON TERMINAL RAILWAY NC Ports Railway Commission Wilmington, NC 28401, 1717 Woodbine St.	K. Earl Durden, President 904/230-8331; 904/230-8848 FAX	Rail Management, Panama City, FL Operator NC Ports Railway Commission Right of Way
YAN	BLACK MOUNTAIN RAILROAD Coral Gables, FL 33134, 3127 Ponce De Leon Blvd.	Walter S. Klements, Sr., President 305/448-9787; 305/443-4500 FAX	
YVRR	YADKIN VALLEY RAILROAD Rural Hall, NC 27405, PO Box 1218	Pete Claussen, President, Gulf & Ohio Railways H.E. "Andy" Anderson, General Manager 910/969-6055, 910/969-9168 FAX	NS Right of Way

NORTH CAROLINA RA



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

JAMES B. HUNT JR.
GOVERNOR

P.O. BOX 25201, RALEIGH, N.C. 27611-5201

GARLAND B. GARRETT JR.
SECRETARY

June 1, 1997

The Honorable Marc Basnight
President Pro Tempore of the Senate
2007 Legislative Building
Raleigh, North Carolina 27601-2808

Dear Senator Basnight:

During the 1996 Session of the General Assembly, House Bill 1172 was ratified, transferring the state's Railroad Safety Inspection Program from the Utilities Commission to the Department of Transportation's Rail Division effective July 1, 1996, as part of G.S. 136-18(33). This legislation also directed that the Secretary of Transportation study the provision of rail safety inspection services and report to the General Assembly whether the state should continue to perform this service as part of a report filed with the President Pro Tempore of the Senate and the Speaker of the House of Representatives no later than June 1, 1997.

The department has evaluated this program and its mission as part of our efforts to provide a safe and efficient multi-modal transportation system for the citizens of North Carolina. We believe that the Safety Inspection Program complements our existing motor carrier and traffic safety efforts, and recommend to the General Assembly that the program be continued and funded from continuing appropriations to the Rail Program.

The following report outlines the history of the Railroad Safety Inspection Program, its current activities involving site-based inspections, and the use of enforcement tools, as necessary. We have also recently completed a customer survey of the state's railroads to better enable us to address the needs of large and small railroads, while emphasizing the safety partnership approach.

The goal of our Railroad Safety Inspection Program is continuous improvement of rail safety. We will continue to work with the state's railroads to identify and resolve many systemic safety problems. This will result in a safer rail system in North Carolina for railroad companies, customers and the public.

This information is also being sent to Speaker Brubaker.

Sincerely,

Garland B. Garrett, Jr.

GBG/ddk

Enclosure

cc: Governor James B. Hunt, Jr.

Class I

Reporting Mark	Railroad/Address	Contact
CSX	CSX TRANSPORTATION State Headquarters Raleigh, NC 27606 5540 Centerview Dr., Suite 425	Lyman Cooper, Resident VICE PRESIDENT 919/851-5433; 919/851-9560 FAX E. Clark Adams, Manager, Industrial Development 704/563-4611; 704/563-4617 FAX
	Corporate Headquarters Jacksonville, FL 32202, 500 Water St.	A.R. Carpenter, President & CEO 904/359-7699; 904/359-3597 FAX
	Florence Service Lane Florence, SC 29506, 100 Oakland Ave.	General Manager 803/664-8200; 803/664-8273 FAX
	Appalachian Service Lane Erwin, TN 37650, 229 Nolichucky Ave.	T.J. Swisher, Superintendent of Field Operations 423/743-2710; 423/743-2719 FAX
	NS NORFOLK SOUTHERN CORPORATION State Headquarters Raleigh, NC 27608, 1500 Carson St.	Durwood Laughinghouse, Resident Vice President 919/831-3002; 919/831-3041 FAX James Bowman, Industrial Development 919/831-3092; 919/831-3041 FAX
Corporate Headquarters Norfolk, VA 23510, Three Commercial Place	David R. Goode, Chairman, President & CEO 757/629-2610; 757/629-2345 FAX	
Piedmont Division Greenville, SC 29601, 1120 W. Washington St.	John Wagner 864/255-4210; 864/255-4279	
Virginia Division Roanoke, VA 24042, 110 Franklin Rd. SE	T.N. Evans, Superintendent 540/981-4476; 540/981-4880 FAX	

Affiliated with A Class I

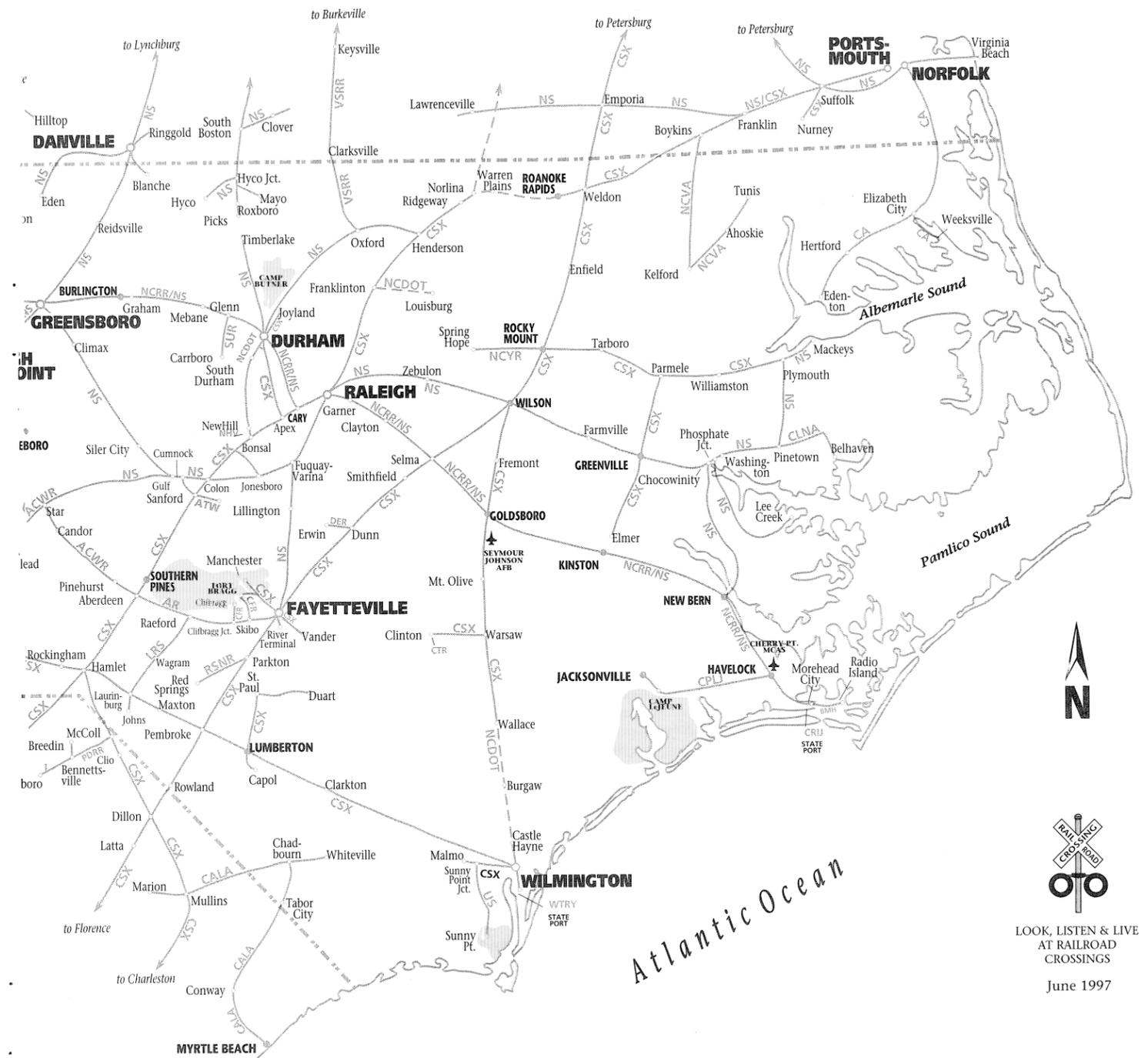
Reporting Mark	Railroad/Address	Contact	Ownership
CPLJ	CAMP LEJEUNE RAILROAD	Norfolk Southern Corporation	USMC Right of Way
HPTD	HIGH POINT, THOMASVILLE & DENTON RR	Winston-Salem Southbound Railway	CSX & NS Corporate
SUR	STATE UNIVERSITY RAILROAD	Norfolk Southern Corporation	NC & NCRRT Right of Way
US	US ARMY RAILROAD		US Army Right of Way
WSS	WINSTON-SALEM SOUTHBOUND RAILWAY Winston Salem, NC 27107, 4550 Overdale Rd.	H.W. Usrey, Operations Manager 910/788-9407; 910/788-9085 FAX	CSX & NS Corporate

Independently Owned

Reporting Mark	Railroad/Address	Contact	Owner/Operator
ACWR	ABERDEEN CAROLINA & WESTERN RAILWAY Star, NC 27356, PO Box 586	Robert Menzies, President 910/428-9030; 910/428-2966 FAX	
AR	ABERDEEN & ROCKFISH RAILROAD Aberdeen, NC 28315, PO Box 917	Edward A. Lewis, President 910/944-2341; 910/944-9738 FAX	
ARC	ALEXANDER RAILROAD Taylorsville, NC 28681, PO Box 277	Benjamin Zachary, General Manager 704/632-2103; 704/585-6541 FAX	
ATW	ATLANTIC & WESTERN RAILWAY, L.P. Sanford, NC 27331, PO Box 1208	Ella Frye, General Manager 919/776-7521; 919/774-4621 FAX	Rail Partners, L.P. Panama City Beach, FL Corporate
BMH	BEAUFORT & MOREHEAD RAILWAY, L.P. Morehead City, NC 28557, PO Box 3608	W.C. Taylor, President A.T. Leary Jr., General Manager 919/726-1777; 919/726-3759 FAX	NC Ports Railway Commission Right of Way
CA	CHESAPEAKE & ALBEMARLE RAILROAD Ahoskie, NC 27910, 214 N. Railroad St. Way	Carl Hollowell, General Manager 919/332-3778; 919/338-3777; 919/338-5634 FAX	RailTex, San Antonio, TX NS Corporate Right of
CALA	CAROLINA SOUTHERN RAILROAD Conway, SC 29526, 171 Highway 905	Ken Pippin, President Jason Pippin, V.P., Operations 803/248-8008; 803/248-8003 FAX	



LRoad SYSTEM



NCDOT RAIL DIVISION
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www.bytrain.org

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LOOK, LISTEN & LIVE
 AT RAILROAD
 CROSSINGS
 June 1997



Rail Division
 North Carolina
 Department of Transportation
 P.O. Box 25201 Raleigh, N.C. 27611-5201

Phone: (919) 733-4713
 Fax: (919) 733-1391

Governor James B. Hunt Jr.
 Secretary Garland B. Garrett, Jr.

NORTH CAROLINA RAIL



REPORTING MARK	RAILROAD NAME	REPORTING MARK	RAILROAD NAME
ACWR	Aberdeen Carolina & Western Railway	LRS	Laurinburg & Southern Railroad
AR	Aberdeen & Rockfish Railroad	NCDOT	North Carolina Department of Transportation
ARC	Alexander Railroad	NCRR	North Carolina Railroad Company
ATW	Atlantic & Western Railway	NCVA	North Carolina & Virginia Railroad
BMH	Beaufort & Morehead Railway	NCYR	Nash County Railroad
CA	Chesapeake & Albemarle Railroad	NHV	New Hope Valley Railroad
CALA	Carolina Southern Railroad	NS	Norfolk Southern Corporation
CFR	Cape Fear Railways	PDRR	Pee Dee River Railway
CLIF	Cliffside Railroad	RSNR	Red Springs & Northern Railroad
CTR	Clinton Terminal Railroad	SUR	State University Railroad
CLNA	Carolina Coastal Railway	TBRY	Thermal Belt Railway
CPLJ	Camp Lejeune Railroad	US	US Military
CRJ	Carolina Rail Services	VSRR	Virginia Southern Railroad
CSX	CSX Transportation	WSS	Winston-Salem Southbound Railway
CWCY	Caldwell County Railroad	WTRY	Wilmington Terminal Railroad
DER	Dunn-Erwin Railway	YAN	Black Mountain Railroad
GSMR	Great Smoky Mountains Railway	YVRR	Yadkin Valley Railroad
HPTD	High Point, Thomasville & Denton Railroad		



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION

JAMES B. HUNT JR.
 GOVERNOR

P.O. BOX 25201, RALEIGH, N.C. 27611-5201

GARLAND B. GARRETT JR.
 SECRETARY

June 1, 1997

The Honorable Harold Brubaker
 Speaker of the House
 North Carolina House of Representatives
 2304 Legislative Building
 Raleigh, North Carolina 27601-1906

Dear Speaker Brubaker:

During the 1996 Session of the General Assembly, House Bill 1172 was ratified, transferring the state's Railroad Safety Inspection Program from the Utilities Commission to the Department of Transportation's Rail Division effective July 1, 1996, as part of G.S. 136-18(33). This legislation also directed that the Secretary of Transportation study the provision of rail safety inspection services and report to the General Assembly whether the state should continue to perform this service as part of a report filed with the President Pro Tempore of the Senate and the Speaker of the House of Representatives no later than June 1, 1997.

The department has evaluated this program and its mission as part of our efforts to provide a safe and efficient multi-modal transportation system for the citizens of North Carolina. We believe that the Safety Inspection Program complements our existing motor carrier and traffic safety efforts, and recommend to the General Assembly that the program be continued and funded from continuing appropriations to the Rail Program.

The following report outlines the history of the Railroad Safety Inspection Program, its current activities involving site-based inspections, and the use of enforcement tools, as necessary. We have also recently completed a customer survey of the state's railroads to better enable us to address the needs of large and small railroads, while emphasizing the safety partnership approach.

The goal of our Railroad Safety Inspection Program is continuous improvement of rail safety. We will continue to work with the state's railroads to identify and resolve many systemic safety problems. This will result in a safer rail system in North Carolina for railroad companies, customers and the public.

This information is also being sent to Senator Basnight.

Sincerely,

 Garland B. Garrett, Jr.

GBG/ddk

Enclosure

cc: Governor James B. Hunt, Jr.



Sec. 5. G.S. 62-236 is recodified as G.S. 136-20.1 and reads as rewritten:

"§ 136-20.1. To require installation and maintenance of block system and safety devices; automatic signals at railroad intersections.

(a) The Department of Transportation is empowered and directed to require any railroad company to install and put in operation and maintain upon the whole or any part of its road a block system of telegraphy or any other reasonable safety device, but no railroad company shall be required to install a block system upon any part of its road unless at least eight trains each way per day are operated on that part.

(b) The Department of Transportation is empowered and directed to require, when public safety demands, where two or more railroads cross each other at a common grade, or any railroad crosses any stream or harbor by means of a bridge, to install and maintain such a system of interlocking or automatic signals as will render it safe for engines and trains to pass over such crossings or bridge without stopping, and to apportion the cost of installation and maintenance between said railroads as may be just and proper."

Sec. 6. The Secretary of Transportation shall study the provision of rail safety inspection services in North Carolina by the State and the Federal Railroad Administration and shall recommend to the General Assembly no later than June 1, 1997, whether the State should continue to perform this service. The recommendation shall be contained in a report filed with the President Pro Tempore of the Senate and the Speaker of the House of Representatives.

Sec. 7. The Department of Transportation shall implement this act within available funds.

Sec. 8. This act becomes effective July 1, 1996.

In the General Assembly read three times and ratified this the 21st day of June, 1996.

Dennis A. Wicker
President of the Senate

Harold J. Brubaker
Speaker of the House of Representatives

GENERAL ASSEMBLY OF NORTH CAROLINA

1995 SESSION

RATIFIED BILL

CHAPTER 673

HOUSE BILL 1172

AN ACT TO TRANSFER THE RAIL SAFETY SECTION FROM THE UTILITIES COMMISSION TO THE DEPARTMENT OF TRANSPORTATION AND TO DIRECT THE SECRETARY OF TRANSPORTATION TO STUDY THE NEED FOR CONTINUATION OF THE RAIL SAFETY INSPECTION PROGRAM.

The General Assembly of North Carolina enacts:

Section 1. The statutory authority, powers, duties, and functions, records, personnel, property, unexpended balances of appropriations, allocations or other funds, including the functions of budgeting and purchasing, of the Rail Safety Section of the Transportation Division of the North Carolina Utilities Commission, is transferred to the Department of Transportation.

Sec. 2. G.S. 62-41 reads as rewritten:

"§ 62- 41. To investigate accidents involving public utilities; to promote general safety program.

The Commission may conduct a program of accident prevention and public safety covering all public utilities with special emphasis on highway safety and transport safety and may investigate the causes of any accident on a highway involving a public utility. Any information obtained upon such investigation shall be reduced to writing and a report thereof filed in the office of the Commission, which shall be subject to public inspection but such report shall not be admissible in evidence in any civil or criminal proceeding arising from such accident. The Commission may adopt reasonable rules and regulations for the safety of the public as affected by public utilities and the safety of public utility employees. The Commission shall cooperate with and coordinate its activities for public utilities with similar programs of the Division of Motor Vehicles, the Insurance Department, the Industrial Commission and other organizations engaged in the promotion of highway safety and employee safety."

Sec. 3. G.S. 62-235 is repealed.

Sec. 4. G.S. 136-18 is amended by adding two new subdivisions to read:

"(33) The Department of Transportation is empowered and directed, from time to time, to carefully examine into and inspect the condition of each railroad, its equipment and facilities, in regard to the safety and convenience of the public and the railroad employees. If the Department finds any equipment or facilities to be unsafe, it shall at once notify the railroad company and require the company to repair the equipment or facilities.

(34) The Department of Transportation may conduct, in a manner consistent with federal law, a program of accident prevention and public safety covering all railroads and may investigate the cause of any railroad accident. In order to facilitate this program, any railroad involved in an accident that must be reported to the Federal Railroad Administration shall also notify the Department of Transportation of the occurrence of the accident."

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Stronger emphasis on road crossings and other measures to promote safety

Three owners felt that there is much the state can do, aside from duplicating the FRA, to promote safety. All in this group mentioned highway grade crossings as a serious problem that is not receiving appropriate attention. They contend that the State Rail Safety Inspection program would be of more benefit to the public if inspectors turned their attention to reducing accidents and fatalities at grade crossings. Among the preventive measures recommended were 1) enhancing visibility for motorists at crossings; 2) reducing the number of crossings; 3) installing flashers; 4) providing gates; 5) repainting clearance lines; and 6) increasing surveillance and enforcement by the highway patrol. Comments on grade crossings included the following:

"In the states where we operate there were 39 people killed in accidents at highway grade crossings in 1996 that involved our trains. In North Carolina we had 38 accidents in 1996 at highway grade crossings which resulted in two deaths and 14 injuries. This is a serious problem."

"More can be done by the state at highway grade crossings. The state could paint the cross road signs and clearance lines, making them more visible. Stop signs and advance warning signs would also be a plus as well as anything that would increase visibility. It could levy higher fines on drivers who don't stop at red lights."

The Department is noted as a national leader among states in the area of highway/railroad at-grade crossing safety. Over \$8 million annually in Federal funds are used for signalization and safety improvements at crossings. An additional \$5.7 million in State and Federal funds is programmed in the 1997 Transportation Improvement Program for the testing of new technologies at crossings, replacement of crossbuck signage, and testing of low-cost active and passive warning devices at crossings. The Department's Governor's Highway Safety Program contributes funding along with the Class I railroads for the Operation Lifesaver grade crossing safety awareness program. North Carolina is one of the few states in the nation that pays for one-half the cost of signal maintenance at crossings on State system roads.

Equality in inspections between the railroad and trucking industries

Two owners talked about the advantages given to the trucking industry as compared to railroads. Accordingly, the state provides highway design, construction and maintenance to support trucking. Also, the fines levied against them are lower than fines given short line railroads. One owner mentioned that trucks damage the state road system and cause many traffic accidents and deaths. He argued that more emphasis on and assistance to the railroads would reduce the number of trucks on the highway. Following are comments made on this issue.

"The trucking industry gets to take advantage of highway engineering, design, construction and maintenance of the road system, yet, they do not pay their fair share. If railroads are going to be inspected for safety, then trucks should be inspected with the same frequency."

"There are fewer inspections for the trucking industry, yet there are many more trucks on the road doing damage. For example, everyone knows that truckers keep two log books. There are more deaths caused by trucks, but the fines the trucking industry faces are less severe than fines levied against the railroad industry. The emphasis on safety should be directed more at the trucking industry, not us. Railroads serve to keep down the number of trucks on the road."

“So much depends on the personality and mood of the individual inspector. Some have a police mentality and they want to find something. Most inspectors are ex-railroad people and they have different focuses. Some have vendettas against the industry. Inspections are very subjective and ratings differ by inspectors.”

“The state inspectors have the same mentality with short lines as they have with longer railroads like Norfolk Southern and CSX. Perhaps establish a Class IV railroad and relax some of the regulations, i.e., paperwork, medical reports. We have three employees, and we are trying to keep this railroad alive which helps the local economy.”

“The time involved to comply with the regulations and forms is enormous. A visit by an inspector requires shutting down our business. For each inspection, we lose a day’s work which must be made up during the weekend.”

“If the state program is to continue, it needs to be proactive. It needs to be promoting and encouraging safety rather than seeking to penalize. We need a partnership arrangement to bring about better safety rather than policemen. We don’t need people hiding in the bushes.”

The inspectors are highly trained to enforce the safety standards uniformly among each railroad and on each inspection day. To a great extent the standards are based on measurable specifications which leave little or no room for individual judgement.

The application of the same standards across large and small lines

Six of the seven owners agreed that the short line railroads should not be held to the same standard as the large railroads. As an example, one owner pointed out that large railroads have personnel who can specialize in each area of the FRA regulations. The short lines, on the other hand, have to know it all. Also, short line trains normally travel at 10 mph rather than the 80 mph as common for the large railroads. Owners of small railroads feel that they are required to meet standards and jump through hoops that have very little to do with their day to day operation or safety. Comments in this vein are listed below.

“From the perspective of a small railroad, we don’t need state inspectors acting as a police force to keep us straight. Safety is important to our operation and we couldn’t survive without a good safety record. We need healthy people to do the work. Safety is also important to maintain our insurance, to keep good public relations and to meet the needs of our customers. There is a great deal of incentive to run a safe operation. Safety is a prevalent concern.”

“When considering the safety of a railroad, look at the accident/incident rates for each railroad. A train that derails at 80 mph is not the same as one that derails at 10 mph. Do not put us on the same level as the large railroads.”

“The federal inspectors are very good at recognizing the difference between the larger and smaller railroads in terms of manpower, revenue, etc. They generally have a practical approach. The state inspectors are normally not so flexible.”

All railroads operating in the State Class I (major railroads) and the short line railroads, utilize similar locomotive equipment to pull trains consisting of the same type freight cars carrying the same types of commodities including hazardous materials. Both of the Class I carriers, and at least one short line, have passenger trains operating over their tracks. Equipment must be addressed in the same manner regardless of speed of operation. The track standards as well as portions of the other safety standards consider speed of operation in application. The slower maximum authorized operating speed established by the railroad the more lenient the requirements including exemption from the safety requirements.

Introduction and Purpose of Report

The North Carolina Department of Transportation’s Rail Division is a proactive organization committed to working as a partner with everyone associated with the State’s railroad industry, including large and small railroads, passengers, shippers, employees, managers, manufacturers, suppliers, local governments, and the general public. An open and participatory environment will better enable us to make progress and define solutions where problems exist. Through such an inclusive effort, the Department can achieve its many transportation goals related to rail and other transportation modes.

The Department remains steadfast in our concern for and commitment to ever safer rail transportation for passengers, railroad employees, and the public. We will achieve improved safety through advocacy, public education, and enforcement of State law and Federal regulations. The pursuit of safety demands continuous vigorous public outreach that will, for example, make more people aware of the dangers of highway/rail at-grade crossings and trespassing on railroad rights-of-way. Saving lives through improved safety is an important and achievable goal.

In summary, the primary mission of the Department of Transportation is the safe movement of people and goods. This priority is extended over all modes of transportation, through infrastructure improvement projects, education, and enforcement.

While it is thought that the Department traditionally pursues its safety efforts through a project approach, there has long been an enforcement presence in the Department and predecessor agencies. The Division of Motor Vehicles Enforcement Section, which enforces motor vehicle laws pertaining to registration and motor carrier safety through inspections and enforcement, was initially created in 1921, and is the oldest State motor vehicle enforcement agency. In addition, the Highway Patrol was part of the Department of Transportation until 1976.

The State has played an active role in railroad industry for over 125 years, since the predecessor agency to the Utilities Commission, the North Carolina Railroad Commission, was created in 1871. In 1978, the North Carolina Utilities Commission became involved in the Federal Railroad Administration (FRA) State Participation Program and began enforcing the Track Safety Standards, later expanding their role in the program to include enforcement of the Motive Power and Equipment (MP&E) Standards.

Much of the Utilities Commission’s involvement in the regulation of railroads was preempted when the Staggers Act was ratified by Congress in 1981. This, along with the Utilities Commission’s unsuccessful attempts to levy an assessment on the state’s railroad companies as a continuing funding source, resulted in discussions to consolidate all railroad safety activities within the Department of Transportation.

During the 1996 Session of the General Assembly, House Bill 1172 was ratified, transferring the State’s Railroad Safety Inspection Program from the Utilities Commission to the Department of Transportation’s Rail Division effective July 1, 1996 as part of G.S. 136-18 (33). Previously, in the 1980’s, the Motor Carrier Safety program was also transferred from the Utilities Commission to the Department of Transportation and placed in the Division of Motor Vehicles Enforcement Section.

House Bill 1172 also directed the Secretary of Transportation to study the provision of rail safety inspection services and report to the General Assembly whether the State should continue to perform this service. This report is in response to that directive. The text of House Bill 1172 is included in the appendix.

The Railroad Safety Inspection Program is now a part of the Rail Division's Engineering & Safety Branch. In addition to its inspection and enforcement duties in the area of Track and Motive Power and Equipment, the inspectors also provide technical assistance in other Rail Division initiatives such as rail crossing safety, track rehabilitation and rail industrial spur construction, and station facility rehabilitation projects.

In addition, House Bill 1172 requires that all North Carolina railroads submit copies of accident and incident reports to the Department of Transportation. This information is intended to be used to evaluate accident trends in the state, and in establishing priorities for the installation of automatic warning devices at public.

This report will give a summary of the history and what we believe will be the future of the Railroad Safety Inspection Program. It is designed to complement the US Department of Transportation's Federal Railroad Administration's October 1996 report to Congress entitled: *Enhancing Rail Safety Now and Into the 21st Century: The Federal Railroad Administration's Safety Programs and Initiatives*.

As a part of our legislative directive to evaluate the Railroad Safety Inspection Program and report, the Department has recently completed a customer survey of the State's railroads to better enable us to address the needs of large and small railroads, while emphasizing the safety partnership approach, thus promoting a new focus on quality service and customer satisfaction. The results of this survey and a response from the Department are included in this document as Appendix II.

The Railroad Industry in North Carolina

This rail industry was at its peak in North Carolina in the 1920's with approximately 5,520 miles of railroads. In 1997, there are 3,684 miles of active rail lines. Since this time, many miles of valuable rail corridors have been lost in North Carolina. The state also has lost the ability to return them to the productive freight and passenger uses for which they were originally built. This loss not only could have a detrimental impact on economic development, it also may seriously affect the state's ability to meet its future transportation needs.

However, the growing interest in revitalizing North Carolina's railroad industry is evident from the growth in small railroads and the continuing public investment in railroad freight and passenger service. For example, the two Class I railroads, Norfolk Southern Corporation and CSX Transportation operate over 1,460 and 1,145 miles of track in the state respectively, approximately 79 percent of the total track miles operated in the state. Combined, in North Carolina, both railroads have 2,692 employees, and a payroll of over \$115 million.

Purpose of the State Railroad Safety Inspection Program

Six of seven owners questioned the reason for having state inspectors when they essentially duplicate what federal inspectors do. The most prevalent sentiment holds that the state inspection program, as it currently exists, has no meaningful purpose. Comments along these lines include the following:

"There is a lot of duplication between state and federal inspectors. Sometimes they even arrive together. We do not know why there are state inspectors. Some states do not have them."

"There is simply no need to have a dual system in operation performing the same inspections, each acting independent of the other. This is a redundancy which does nothing to improve safety."

"I am at a loss as to why we have both programs. Is North Carolina any different from Virginia or South Carolina? The FRA and state inspectors are interpreting the same rules."

"The state inspectors need to bring something different to the process than is already being provided by the FRA."

Overall, the majority of owners felt that the current system is not cost effective and it also places an unfair burden on the small lines that have to close down their operations to accommodate two very similar inspections. Work is thrown off schedule and employees are left idle during the inspection.

The FRA/State Safety Program is a cooperative effort towards the reduction in railroad accidents established by Section 206 of the Railroad Safety Act of 1970. Extensive communication between the State and FRA inspectors is practiced to avoid duplication of effort. In response to the railroads' complaints of inspection duplication, review of data on all inspection activities within the State have been reviewed. No duplication of effort can be established by that information or any information supplied by the railroads. Any sharp increase in inspection activities experienced by a railroad is indicative of the agencies' concerns for safety and that railroads history of compliance with the regulations.

A second theme emerging from the comments of three owners relates to the money used to fund the state inspection team. They feel that the money could be better used to improve railroad safety at highway grade crossings where there are documented problems.

Cooperation and communication between inspectors and the industry

Five of seven owners commented on the lack of cooperation and communication between the railroad industry and state inspectors. They felt that inspectors should serve as consultants and help the small railroads with safety matters. Collectively, their opinion was that inspectors are not always fair in the way they conduct inspections. Some gave examples of inspectors hiding in the bushes and harboring a gotcha mentality when they fine them for being out of compliance. While they agreed that the atmosphere has gotten better over the past few years, there remains a feeling of distrust between inspectors and owners. The following comments represent the sentiments expressed on the lack of cooperation.

"There is a problem with not being able to know when inspectors are coming. We don't have anything to hide. It is just that we have crews scheduled to work. When the inspectors come, our business comes to a halt and we have crews standing around doing nothing. This costs us money."

Additional Comments

Reduce Regulations

"Regulate small independent trucking companies the same way you regulate short line railroads. There is no need to regulate. Liability alone provides the incentive to comply with the FRA program."

"We are not an operating railroad. We have three operations; two are leased to others, and one is operated by a subsidiary."

Trucking is regulated through safety inspections. Review of inspection reports generated by the inspectors do not support the claim that liability alone provides the incentive to comply inspections consistently reveal situations of non-compliance.

Eliminate Inspections

"Inspectors should have a role as teachers, which would result in better safety conditions. T-6 car should be substituted by state instead of duplicating federal inspections. We have run the T-6 car on our line for the past three years and have had excellent results. The federal and state inspectors would not be able to provide as detailed data on a manual inspection as the T-6 car can."

"Operating practices are very intense on railroads and state or FRA positions do not get that involved as there is no need to. Equipment and track inspections should be in the forefront. We do not need close inspections on locomotives as railroad program is sufficient. Too many minor violations done on locomotive, which has nothing to do with the safe movement of the locomotive."

Duplication

"I strongly believe that the NCDOT Rail Division should re-direct its rail safety personnel to work in areas not duplicated by FRA inspectors. Grade crossing consolidation/closure is one such obvious area that must have active state involvement if it is to ever be successful in North Carolina. The return on public safety could be enormous by reducing the opportunity for rail-highway grade crossing collisions. On the other hand, increasing the scope of state inspections to other disciplines (as suggested herein) is a slap in the face to safety conscious railroads such as this one (Alexander Railroad Company). We cannot afford an unsafe operating environment and do not need more inspectors to "keep us safe."

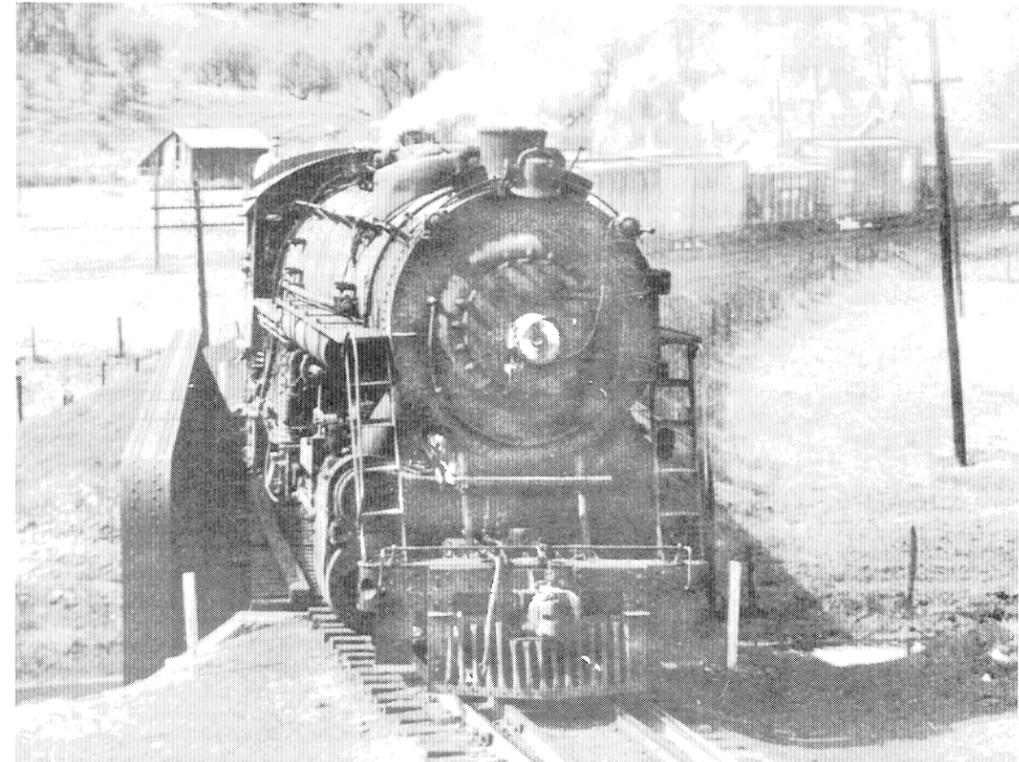
Summary: Railroad Owner Interviews

Of the 19 owners who were sent Rail Safety Inspection questionnaires, 11 were respondents to the survey. To clarify and enhance information collected on the survey form, attempts were made to contact each respondent for face-to-face interviews. Seven interviews were conducted with owners or their representatives as a result of this effort.

An evaluation of the seven interviews indicates railroad owners are mainly concerned with five broad categories of the State Rail Safety Inspection Program: 1) purpose of the state program; 2) cooperation and communication between inspectors and the industry; 3) the application of the same standards across large and small lines; 4) stronger emphasis on road crossings and other measures to promote safety; and 5) equality in inspections between the railroad and trucking industries.

Twenty-four short line or independent railroads have operations in North Carolina, for a combined total of 765 miles of track, 247 employees, and a payroll of over \$5.8 million.

The 1995 Utilities Commission Report estimated that based on 1993 data, North Carolina's railroads had a combined value of \$16,653,631,000, with combined revenues of \$452,365,000.



Freight service in North Carolina in mid 1940s.

N.C. Division of Archives & History

A Brief History of the Railroad Safety Inspection Program

The State of North Carolina has been active in regulating the railroad industry since 1871. A series of legislative actions affecting the railroad industry occurred over the ensuing years including the enactment of G.S. 62-235 (1907) which provided the State jurisdiction over railroad safety. In one way or another, the State has been involved in railroad safety inspection and enforcement since that time.

On a National level, the need for a comprehensive and nationally uniform railroad safety regulation was recognized and met by the passage into law of the Federal Railroad Act of 1970. The Act established a different approach to governments' involvement in railroad safety. The provisions of the Act may be categorized according to their authority pertaining to the issuance of regulations, state participation, and enforcement. Section 206 of the Act provides for the active involvement of the states in the administration of the safety program and enforcement of the regulations. The act also grants the US Secretary of Transportation general safety jurisdiction to prescribe rules, regulations, orders, and standards for all areas of railroad safety. This authorization constituted a departure from the previous legislative

practice of prescribing railroad safety standards within areas specifically designated by statute and the enforcement of those statutes solely by a federal agency.

On May 18, 1971, Robert L. Kessler, Chief Counsel for the Federal Railroad Administration (FRA), addressed a letter to Governor Robert W. Scott soliciting North Carolina for the FRA/State Participation Program. Having been involved with railroad safety, the North Carolina Utilities Commission (NCUC) expressed interest in the program. By 1978, the FRA requirements for participation had been satisfied and the Utilities Commission began participation in the discipline of Track Safety. Although enforcement of safety standards in other disciplines were open to the participants of the program, the NCUC did not take advantage of this until 1983, when an inspector was hired for the enforcement of the Motive Power and Equipment (MP&E) Standards. The remaining safety disciplines which are available to the states for enforcement are the Operating Practices Safety Standards, the Signal and Train Control Safety Standards, and the Hazardous Materials Safety Regulations.

The Railroad Safety Inspection Program was transferred to the Department of Transportation's Rail Division on July 1, 1996 with ratification of House Bill 1172. The State's authority to inspect railroads and participate in the FRA Safety program is found in G.S. 136-18 (33).

Present Program and Current Issues

The Railroad Safety Inspection Program serves the railroad industry: employees, freight and passenger railroads, and suppliers; railroad users, including passengers and shippers; and the safety community: other State and local government agencies, the general public, law enforcement agencies and emergency responders.

Inspection is one of the key components of railroad safety. With both empirical and research information existing as to conditions that give rise to accidents, inspection by knowledgeable individuals will give sufficient warning when such conditions are developing, or have developed, to allow preventative or corrective actions to be taken. An inspection program that depends upon the interlocking efforts of the FRA, the States, and the railroads is now in place. Although the aim of the FRA/State Inspection Program is accident prevention, it emphasizes the enforcement implication of the inspection system to monitor carrier compliance with Federal regulations as mandated by law. It is the railroads who are ultimately responsible for compliance with the regulations.

Major objectives focus on answers to the root causes of railroad safety problems, ensuring that safety enforcement actively focuses on high risk areas, promoting consistency in the application of Federal safety regulations, developing new and cost effective regulatory solutions which enhance railroad safety for the citizens of North Carolina, and improve communications with our customers via listening sessions, roundtables, discussions, meetings with railroads, and other proactive approaches.

By annual agreement, the North Carolina Department of Transportation (NCDOT) is active in the FRA/State Participation Program. Under this initiative, the NCDOT Railroad

Q19. Please list below any federal track safety or motive power and equipment regulations you believe should be revised or abolished due to changing industry practices and technology.

"Reduce Regulations for Short lines"

"Should recognize that 10-20 mph operation is entirely different from 55 mph."

"The inspection frequency for track is weekly and motive power is 91 days and annually. This should be reduced for low speed short lines versus high speed heavy density Class I's."

"Develop a Class IV railroad for simple existence of low density short lines."

"Employee Regulations"

"Abolish lone worker protection."

"Revise "blue flag" rule to allow mechanical department employees to become utility employees in order to hang ETD's."

"Use T-6 car annually in lieu of manual inspections. Money paid for fines should be put back into the railroad, not into a general fund. Fines and regulations should differ for short lines versus Class I railroads."

"Ditch lights have got to be the silliest thing ever put on a locomotive."

Q23. Please list below any safety related training that should be provided through FRA and/or the State Railroad Inspection Program concerning railroad safety regulations.

"Need to work together more on road crossings to the private sector."

"New regulations and changes should be sent directly to the railroads instead of finding out about them from the Short line Association. There should be more one-on-one training with the railroads."

"Public educational programs on rail/highway grade crossings and trespasser issues."

"Helpful to have them, especially if railroad consistently wants to get work done properly."

"No State Training"

"No state training needed by railroads."

"FRA program is adequate."

"We appreciate any training, but do not consider it the state's responsibility to train our people."

"Let inspectors attend railroad safety and operating rule classes."

Q24. Please list below specific areas of 49CFR, Parts 200-399 where NCDOT could assist your railroad in achieving a better understanding of the safety regulations.

"Classroom study with NCDOT people on hand."

"More training on car inspections."

"Part 219 - Control of alcohol and drug use."

"None. With current liability laws, there is no need for state inspectors. Let FRA handle them."

Cooperation and Education

"We feel they need to assure that state and federal inspectors have the same understanding and interpretation of regulations so that we do not get mixed signals. This is better than it used to be, but still needs work."

"If rail companies have employees that have problems in certain areas, I think the safety inspectors should hold a class and help educate railroads to what inspectors are looking for."

"More of a team effort instead of the FRA/State versus rail companies."

"More local contact with field transportation officers."

"Status Quo"

"I see no need to put waves in still water."

"Good, no change needed."

"Change Program"

"I would like to see the state become more involved with T-6 car inspections. See enclosed T-6 car data. Pre-notification of 1 to 2 days that inspections will be conducted, due to train operations being interrupted. If we have such notification this will allow us to plan our schedule accordingly."

"Transfer all to FRA."

"The above scores would be higher were it not for one former state MP&E inspector with a very bad attitude. Otherwise, I have had positive experiences with state inspectors."

The Railroad Safety Act of 1970 intends for the involvement of the States in enforcement of the regulations.

The T-6 car inspections referred to is the FRA designation for an experimental track test vehicle formally referred to as the Gage Restraint Measuring System (GRMS). The State inspectors have been involved with GRMS since 1992.

Q11. What suggestions can you make to improve the relationship between the railroad industry and state/federal regulators?

"Cooperation and Less Adversity"

"Take more advising attitude and less penalizing attitude."

"The inspectors should be more in the line of consultants, instead of enforcement officers. We have noticed a change over the past three years in this general direction."

"Closer working relationship. Too much adversity."

"Counsel railroad employees in deficient areas and work to correct instead of citing violations."

"Everyone needs to get on the same page and understand each other."

"Status Quo"

"I have no problems with the way things are."

"So far as I know, in dealing with the state inspectors our relationship seems to be very good."

"Most inspectors are very good to work with. They expect us to do our job, which is as it should be. Frank Lumsden is excellent about guidance."

"Eliminate Duplication of State/Federal Inspectors"

"Eliminate state regulators. Develop a Class IV carrier."

"Stop duplicate inspections of state and federal in track and MP&E disciplines."

"Visual on-the-job evaluation would be beneficial because some regulations hold back needed production without viably correcting problems."

Safety Inspection Program enforces specific Federal regulations as published in the Code of Federal Regulations (CFR), Title 49, parts 200 to 399. The NCDOT Railroad Safety Inspection Program now consists of three FRA trained and certified inspectors, two Track Safety and one Motive Power and Equipment inspector. NCDOT inspectors are responsible for the inspection of over 3,500 miles of railroad track and thousands of railroad cars and locomotives in North Carolina.

The State Railroad Safety Inspection Program cooperates with the FRA in providing the following services:

- Conduct Rail Safety Audits - Through this process, State and FRA inspectors identify systemic problems in railroad safety through the performance of compliance inspections.
- Identify and Resolve Regulatory Interpretations: State inspectors assist with FRA Technical Resolution Committees to ensure that Federal policies and regulations are clear and consistently applied.
- Develop Consensus-Based Regulations - The FRA chairs the Railroad Safety Advisory Committee (RSAC) established in March 1996 to make the FRA's regulatory program more collaborative and, where possible, develop consensus solutions on regulatory issues. The national representative for the American Association of State Highway Transportation Officials presently serving on the RSAC, is the Assistant Director for Engineering and Safety for the Department's Rail Division. In addition, the State Railroad Safety Inspection Program manager serves on various subcommittees and working groups associated with the RSAC. Considering our State's participation in this process, we can be assured that our needs are well represented.
- Promote Safety Partnerships - Partnerships with FRA, railroad management, and labor permit mutually-beneficial arrangements for achieving the common goal of railroad safety.

In most cases, the railroad employees responsible for the various inspections are also responsible for the repairs of any defective conditions. The effectiveness of the inspection depends on the thoroughness of that employee; his ability to detect unsafe conditions; the availability of the labor, materials, financial resources, and facilities needed to conduct repairs; and pressures from management to maintain uninterrupted train operations. These variables affect the inspections conducted by railroad employees and do not always have a positive influence on safety. The FRA/State inspection force performs its duties unencumbered by contingencies and without distractions from issues other than safety.

The purpose of the safety program is to promote safety in the railroad industry and to determine carrier compliance with the minimum safety standards, not to prescribe maintenance. An inspection is conducted by visual examination and by making physical measurements. Inspections are most often performed in the presence of a railroad representative. When situations of non-compliance are encountered, a determination is made by the inspector as to what enforcement action to pursue. The most common action is to note the item of non-compliance on the inspection report, thereby advising the railroad representative of its existence and providing the opportunity to bring the item into compliance. If the carrier does not comply, or if in the judgment of the inspector the

situation warrants stiffer action, a violation report can be filed. When a violation report is issued, the railroad is subject to an assessment of not less than \$250 and not more than \$20,000 for each violation. All reports are processed through the FRA, and all fines collected go to the U.S. Treasury.

State Railroad Safety Inspectors also assist other State agencies with investigations related to railroads and rail safety. Most recently, the Department of Environment, Health, and Natural Resources Forestry Division asked for and received assistance with the investigation of a series of forest fires along the railroad right of way through Moore and Montgomery Counties. The suspected cause of those fires is related to train operations and the condition of the locomotives used. The safety inspectors have performed inspections addressing the condition of that equipment and continue to monitor the situation.

Continuing Need for Participation in the FRA/State Safety Program

All railroads operating within and through the state of North Carolina operate in like manner and using similar equipment. When comparing the operations of the major carriers, the class one railroads, to the operation of the short line or regional railroads, little difference other than maximum operating speeds can be found. The short line railroads connect with the class one railroads for purposes of freight interchange. It is obvious then that those railroads carry the same type commodities including hazardous materials. Both class one carriers and some short lines carry passenger trains over their tracks. Both the large and small railroads operate through the cities, over many environmentally sensitive lands and waterways of the State. Each of the railroads are required to comply with standards defined as minimum safety standards not a maintenance standard. Some of these requirements, such as the minimum standards for track conditions, are applied according to the speed of train operations set by the railroad, the slower the operating speed the more lenient the standard.

Once safety enforcement responsibilities are assumed by government, it finds itself vulnerable to questions of adequacy from the public and criticisms and accusations of excessive regulation by the industry subject to the regulation. A satisfactory, balanced solution to such a dilemma is not easily formulated. It is difficult to assign a value to the injuries, deaths, and damages avoided by implementation of an enforcement safety program. On the contrary, the lives lost, injuries suffered, and damages incurred as a result of accidents are easily tabulated. Participation in the FRA/State Safety program by North Carolina benefits the State in a number of ways. It provides a nationally uniform safety standard that is the product of 98 years of development, relieving the State from development and defense of independent state safety standards. FRA provides funding for training and certification of inspectors and available to those inspectors a wealth of technical information gathered nationwide. The FRA also provides legal support for any enforcement actions taken by the inspectors, relieving the State from the expense of maintaining such specialized legal personnel.

Additional Comments

The survey concluded by asking the respondents to provide any additional comments. Two respondents suggested that small railroads and lease companies should be regulated less than the larger carriers, while two other respondents advocate eliminating or changing the focus of safety inspections.

All railroads operating in the State Class I (major railroads) and the short line railroads, utilize similar locomotive equipment to pull trains consisting of the same type freight cars carrying the same types of commodities including hazardous materials. Both of the Class I carriers, and at least one short line, have passenger trains operating over their tracks. Equipment must be addressed in the same manner regardless of speed of operation. The track standards as well as portions of the other safety standards consider speed of operation in application. The slower maximum authorized operating speed established by the railroad the more lenient the requirements including exemption from the safety requirements.

Open Ended Questions

Q4. Assuming that you are going to receive regular safety inspections, what do you believe is a reasonable schedule?

"Never, let FRA do it."

"As needed due to accidents or other problems."

The State's inspectors operate in cooperation with FRA Region 3 Principal Inspector Program which addresses inspection scheduling on short line railroads based on accident and compliance histories.

Q6. What suggestions can you offer to improve the safety partnership and working relationship between rail companies and safety inspectors?

"Let us know when they are coming. Inspectors should not dwell on minor defects."

"Provide prior written notification of inspection date, time, and place in order to allocate time and personnel to accompany inspector."

"The inspector that inspects our track is always prepared with safety appraisal, and works very well with maintaining the schedule that we have to maintain."

"Let the rail company know prior to beginning inspections."

"Have scheduling flexibility. We have to suspend service to accommodate inspectors."

State inspectors have always made extensive efforts to schedule inspections so as to cause minimal disruption to the railroads schedule giving prior notification when possible. All track and equipment is required to be inspected by the operating railroad and inspections are conducted with the railroad employees conducting those inspections.

Leadership by the State Railroad Safety Inspection Program

The survey respondents were asked to reveal the level of leadership they believe the state safety inspection program provides to the railroads in the areas of rail safety education and regulation issues. A rating scale of 1 to 5 was used, where 1 represents weak leadership and 5 represents strong leadership.

On the issue of rail safety education, 30% of the respondents gave a rating of 4 or 5, indicating strong leadership, while 50% gave ratings of 1 or 2, signifying weak leadership. Concerning regulation issues, 21% of the respondents gave the state inspection program a rating of 4 or 5 (strong leadership), while 53% gave ratings of 1 or 2 (weak leadership).

Table 21 NCDOT Leadership in Rail Safety Education

	Total (N=20)	Owners (n=10)	Supervisors (n=10)
1 Weak leadership	30%	40%	20%
2	20%	40%	0%
3	20%	0%	40%
4	25%	20%	30%
5 Strong leadership	5%	0%	10%

Table 22 NCDOT Leadership in Regulation Issues

	Total (N=19)	Owners (n=10)	Supervisors (n=9)
1 Weak leadership	32%	50%	11%
2	21%	30%	11%
3	26%	10%	44%
4	16%	10%	22%
5 Strong leadership	5%	0%	11%

Programs are being considered to improve the States role in safety education and regulation issues.

Suggestions for Safety Related Training

Eight respondents offered comments for safety related training that should be provided through the state or federal inspection programs. Four suggestions relate to coordination and cooperation between railroads and inspectors. These comments address working together and educational programs. Three respondents remarked that training should come from the federal program and not from the state. The remaining comment suggested letting inspectors attend railroad safety and operating rule classes.

Table 23 Suggestions for Safety Related Training

	Total (N=8)	Owners (n=6)	Supervisors (n=2)
Coordination, cooperation	50%	50%	50%
No state training program	38%	50%	0%
Other	13%	0%	50%

The State inspectors have been involved in safety related training offered to the railroads in conjunction with the FRA and will continue to be, expanding their role in the effort in the future.



Freight derailment, May 11, 1987, in Elm City investigated by N.C. Rail Safety personnel

State Highway Patrol Photo

Inspectors employed by the State are sensitive to the particular needs of North Carolina and its citizens and are available for independent utilization and deployment according to those needs. Inspectors of the FRA, although active in North Carolina, are involved in fulfilling the agendas and policies of the Federal Government. The FRA, concerned with national issues, may not always concur with North Carolina as to the importance and priority of local safety issues. Withdrawal from the program would leave the State without its present abilities and with a 50% reduction in inspection coverage. In the event of a major accident the State would likely be subject to criticism as it was in the aftermath of the fire which occurred at Imperial Food Products in Hamlet, North Carolina. The FRA has stated that it does not have the ability to provide additional inspection coverage in the event any of the 31 participating states resign from the program.

Railroad track, equipment, signals, operations, and hazardous materials shipments not in compliance with the minimum safety standards constitute an unreasonable risk to life and property. As stated earlier, the standards enforced through the FRA/State Safety Program are clearly defined as minimum requirements for safety. The state of repair required by the standards falls far below what could reasonably be considered a maintenance standard. Inspections conducted during 1996 revealed 818 defective track conditions and 1,253 defective equipment conditions. Federal and State safety inspections continue to reveal conditions of non-compliance in all five of the safety disciplines. In light of this, serious consideration should be given to undertaking the enforcement of the Signal and Train Control, Operating Practices, and Hazardous Materials regulations. In the very least, there is a continuing need for railroad safety enforcement by the State of the Track and the Motive Power & Equipment Safety Standards.

Proposed Changes Implemented and Planned

During the past six months since the transfer to the Department of Transportation, the Railroad Safety Inspection Program has undergone an internal review and series of changes which we believe will improve their efficiency and effectiveness and thus better serve the citizens of North Carolina.

The State Program is following the FRA's lead to implement new safety assurance and compliance programs, de-emphasizing individual inspections and the assessment of fines in favor of safety audits to evaluate a railroad's safety process, identify root causes of noncompliance and help solve systemic problems. After such audits, railroads develop annual system safety plans to resolve the problems, subject to State/FRA review and approval. Enforcement activities are focused on railroads' performance against the plan.

In addition, inspectors have been equipped with portable computers and FRA is assisting with a transition to computer-based inspection forms that are electronically transmitted to the FRA Region 3 headquarters in Atlanta. Information regarding the Railroad Safety Inspection Program, including this report, has been placed on the World Wide Web for distribution to citizens via the Information Superhighway. Computerization will also assist us in keeping databases on accidents, violations, inspections, and when possible, advanced notification to the railroads of pending inspections.

All North Carolina railroads are required to submit copies of accident and incident reports to the Department of Transportation. Although less than half of railroads operating in North Carolina have voluntarily complied with this requirement, this information is



Demonstration of X2000 in Raleigh.

Jack Moore

Suggested Changes in Track Safety and Motive Power Equipment Regulations

Only a few of the respondents listed track safety or motive power and equipment regulations they believe should be revised or abolished due to changing industry practices and technology. Three respondents cited changes that should be made in reducing regulations imposed for smaller short line operations, while two respondents are interested in changes regarding employee regulations.

Table 19 Suggested Changes in Regulations

	Total (N=7)	Owners (n=6)	Supervisors (n=1)
Reduce regulations for short lines	43%	50%	0%
Employee regulations	29%	17%	100%
Other	29%	33%	0%

Regulation of Private At-Grade Crossings by NCDOT

General agreement exists among the respondents that NCDOT's safety program should include regulation of private at-grade crossings. Fifty-five percent of the survey participants either strongly agree (22%) or agree (33%) that NCDOT should regulate these crossings. Still, however, 34% of the respondents are opposed to NCDOT regulation of private at-grade crossings (17% disagree; 17% strongly disagree).

Table 20 NCDOT Regulation of Private At-Grade Crossings

	Total (N=18)	Owners (n=9)	Supervisors (n=9)
1 Strongly disagree	17%	33%	0%
2 Disagree	17%	33%	0%
3 Neutral	11%	0%	22%
4 Agree	33%	22%	44%
5 Strongly agree	22%	11%	33%

Interpretation of Safety Regulations

The next series of questions focused on the issue of interpretation of railroad safety regulations by safety inspectors. The areas covered were 1) how adequately FRA principle inspectors, trained in only one inspection discipline, can assess compliance with all safety standards, 2) frequency that safety regulations are interpreted accurately by state inspectors, 3) frequency that conflicts between state and federal interpretations are resolved satisfactorily, and 4) difference between state and federal inspectors in the interpretation of regulations. The percentage of respondents scoring each issue on the "positive" end of the spectrum (score of 4 or 5) is presented in the table below.

Table 18 Interpretation of Safety Regulations
(combined 4 and 5 scores)

	Total (N=20)	Owners (n=10)	Supervisors (n=10)
Adequately assesses compliance with all safety standards	30%	40%	20%
Accurately interpreted regulations by state inspectors	65%	40%	90%
Satisfactory interpretation of regulations when state/federal conflict	75%	70%	80%
Narrow difference in state and federal interpretation	55%	40%	70%

Both the FRA and the State inspectors receive the same training for application and interpretation of the Safety Regulations. The State inspectors are certified by the FRA after successfully completing the training program. Interpretation issues among inspectors are submitted to the FRA Technical Resolution Committee for review and issuance of official interpretation and applications to ensure uniformity among inspectors. Once again the program scored higher among the supervisors who are concerned with compliance on a daily basis.

Familiarity with 49CFR, Parts 200-399 and Environmental Compliance Handbook

Ninety-five percent of the respondents have a copy of 49CFR, Parts 200-399 which contain the majority of federal rail safety regulations. Two respondents add that assistance from NCDOT would be helpful in better understanding these safety regulations.

Fifty percent of the respondents indicated they are familiar with and have a copy of the Environmental Compliance Handbook.

intended to be used to evaluate accident trends in the state when compliance approaches 100%, enabling the allocation of resources to where there are needed most. Accident reports pertaining to highway/rail at-grade crossings are forwarded to the Department's Division of Highways Traffic Engineering and Safety Systems Branch for data collection in accident statistic data bases and use in establishing priorities for the installation of automatic warning devices at public crossings.

Since being transferred to the Department of Transportation, Railroad Safety Inspection Program employees have also assisted with and provided expertise to many of the Division's existing programs, such as: reviewing needs, specification and construction related to the rehabilitation of branch line railroads, building of industrial rail spurs, and renovation of historic rail depots; highway/railroad at-grade crossing evaluations; and rail corridor acquisitions.

By statute, the Department reimburses the state's operating railroads for one-half the annual cost of the maintenance of signal devices at highway/railroad at-grade crossings. Also, the Department administers the Federal-Aid program to install signal devices at crossings, and has several initiatives underway to improve safety at the State's 5,000 public crossings. Considering our involvement in at-grade crossing safety, the Department plans to eventually add a fourth inspector to the FRA/State Railroad Safety Inspection Program to inspect crossing signal devices and automatic train control signal systems and a fifth inspector in the area of operating practices.

Jurisdiction Over Private Rail Crossings

The determination of the North Carolina Utilities Commission that it does not have jurisdiction over private rail crossings has left unanswered the question of which entity does possess such jurisdiction. The Commission determined that it lacks such jurisdiction after considering responses from the Public Staff and Attorney General in the case entitled In the Matter of The Interstate Commerce Commission (ICC) Termination Act of 1995 and Its Effect on the North Carolina Utilities Commission's Jurisdiction in Complaint Cases Involving Private Crossing Disputes, Docket No. R-100, Sub 3.

The Commission decided that, as a result of House Bill 1172, the Commission is preempted from asserting jurisdiction in complaint cases regarding private crossings. However, the Commission rejected the argument that the Interstate Commerce Commission Termination Act of 1995 preempts state jurisdiction over such cases. The Commission's position is that House Bill 1172 transferred the power to regulate safety at private rail crossings from the Commission to NCDOT.

The North Carolina Department of Justice's Transportation Division has determined that House Bill 1172 does not transfer authority over private crossing complaint cases to the Department. The Department asserts that such a legislative intent is not contained in either House Bill 1172 or in committee or floor discussions. Even if this authority was transferred, the Department does not have the judicial capacity to preside over these cases, as the Commission has been doing for approximately the past 50 years.

The Commission and the Department agree that the ICC Termination Act gave the Surface Transportation Board jurisdiction over intrastate rail issues. However, it is also agreed that until the Board preempts state authority over this private crossing safety, the State can continue to regulate these matters.

Since the Board has not yet chosen to preempt in that regard, the State still has jurisdiction over safety at private rail crossings. But a gap remains as to whether this authority is possessed by the Utilities Commission or by the Department of Transportation. As the Commission concluded, the Commission would have this jurisdiction if the General Assembly would give it such statutory authority as a component of the state's police power to protect the safety and welfare of the public.

Issues concerning private crossings continue to arise. This is mainly a result of initiatives to improve safety by decreasing the number of at-grade crossings nationwide as the US Department of Transportation has set a goal of reducing the number of public at-grade crossings by 25 percent. Operating railroads are attempting to close private crossings when property owners do not have a formal crossing agreement with the railroads. Such orphan crossings are a safety, liability and maintenance problem for railroads but sometimes a necessity for the property owner. Almost all of the private crossings are only protected by passive warning devices such as crossbuck signs and many have poor visibility. These conditions are not covered by the Department of Transportation's signalization program because of their private nature. Currently the Department has no statutory authority to make improvements at private crossings, as they are considered a private agreement between a property owner and the railroad.

Considering the Department of Transportation's interest in improving safety at highway/railroad at-grade crossings and reducing rail travel times between Raleigh and Charlotte, the consolidation of redundant and improvement of unsafe private crossings is certain to be an issue. We believe that the General Assembly should study this issue further with the Department, Utilities Commission, and other affected parties.

Importance of Safety Disciplines

The respondents were asked to rate the importance of five safety disciplines with regard to the safety of their railroad operation. Using a scale of 1 to 5, where 1 means the discipline is not very important and 5 means it is very important, the results are illustrated below.

Table 16 Importance of Safety Disciplines
(combined 4 and 5 scores)

	Total (N=22)	Owners (n=11)	Supervisors (n=11)
Track safety	77%	64%	91%
Motive power and equipment	77%	64%	91%
Operating practices	73%	73%	73%
Signal and train control	77%	64%	91%
Hazardous materials	82%	64%	100%

Importance of Adding Disciplines to NCDOT's Safety Program

Currently, NCDOT's safety program includes inspections only for the track safety and motive power and equipment disciplines. The respondents were asked to indicate how important to the safety of their railroad operation the addition of the operating practices, signal and train control and hazardous materials disciplines would be. The table below shows the proportion of respondents giving scores of 4 and 5 which represent higher degrees of importance for each discipline (5 represents very important).

Table 17 Importance of Additional Disciplines
(combined 4 and 5 scores)

	Total (N=20)	Owners (n=10)	Supervisors (n=10)
Operating practices	38%	30%	45%
Signal and train control	50%	40%	60%
Hazardous materials	60%	40%	80%

Table 14 Benefit for NCDOT to Participate in the SSSLA

	Total (N=20)	Owners (n=10)	Supervisors (n=10)
1 Not very beneficial	0%	0%	0%
2	15%	30%	0%
3	35%	30%	40%
4	10%	0%	20%
5 Very beneficial	40%	40%	40%

Suggestions to Improve Relationship Between Railroad Industry and Inspectors

When provided with the opportunity to offer suggestions on ways to improve the relationship between the railroad industry and state/federal inspectors, the most prominent respondent comments addressed improving cooperation and reducing adversity. A sample of the remarks include "Take more of an advising attitude and less of a penalizing attitude..." and "The inspectors should be more in the line of consultants, instead of enforcement officers."

Also notable were comments that suggest keeping things as they are. Here, respondents remark that "...in dealing with the state inspectors, our relationship seems to be very good..." and "Most inspectors are very good to work with." Two respondents suggest, however, eliminating the duplication of state and federal inspectors.

Table 15 Suggestions to Improve Relationship

	Total (N=11)	Owners (n=5)	Supervisors (n=6)
Cooperation, less adversity	45%	40%	50%
Status quo	27%	20%	33%
Eliminate state/federal duplication	18%	40%	0%
Other	9%	0%	17%

Inspectors of the State program have always been encouraged to conduct themselves in a professional manner at all times especially while in the conduct of their duties. That fact is witnessed in Table 6 of this survey were the inspectors scored very high for their professionalism.

Appendix

Railroad Safety Inspection Client Survey

Survey Methodology

The responses gathered for this report are the result of 22 questionnaires completed by short line railroad personnel with operations in North Carolina. The questionnaires were distributed on November 18, 1996 and returned to the Office of Research and Policy Analysis between November 26, 1996 and January 8, 1997.

The sampling frame consisted of two target groups. The owners/operators of nineteen short line railroads in North Carolina comprised the first group. Eleven of the nineteen owners/operators responded to the survey, yielding a 58% rate of response. The second target group consisted of approximately 25 short line rail yard supervisors. Among this group, eleven responded for a response rate of 44%.

This research project was designed by the Rail Division's Engineering and Safety Branch and the Office of Research and Policy Analysis. The Office of Research and Policy Analysis was responsible for distribution and collection of the questionnaires, as well as data entry, coding, processing and analysis of all survey data.

Survey Summary

This study resulted in twenty-two members of the railroad industry taking part; eleven serving in the capacity of a short line owner/operator and eleven serving as a field/rail yard supervisor. The results reveal that the owners are generally more critical and skeptical of the state inspection program than are the supervisors.

There is a desire by many of the respondents in this survey to see the state inspection program eliminated. This stems primarily from responses concerning the lack of coordination between state and federal programs, as well as duplication of effort between the two inspecting entities. Owners are clearly more critical here than are the supervisors. A portion of this may be due to the fact that inspections are often conducted with field supervisors, and the results are transmitted to the owners. Consequently, the owners may perceive less coordination between the federal and state inspection programs.

All respondents in the study have been inspected by state and federal inspection personnel and appear to be familiar with the way the programs operate. When asked about the frequency with which inspections should occur, less frequently is preferred by both respondent groups.

In spite of the fact that the survey respondents do not always look favorably upon the roles of the state inspectors, they do give reasonably good scores on several specific rating items. These include professionalism, knowledge of safety regulations, and a willingness to provide useful safety regulation information.

Improved cooperation is a theme that emerges from the survey results. The respondents address such matters as knowing when inspectors are coming and having them serve more

as teachers and consultants as ways the working relationship can be improved. There are other hints as well that suggest ways to further improve the relationship. These include taking on a team approach between the railroads and inspectors, conducting forums for resolving discrepancies related to technical matters, and initiating the Department's involvement in organizations like the Rail Association of North Carolina and the Southern States Short Line Association.

The respondents acknowledge the importance of the five safety inspection disciplines in promoting railroad safety, yet they are less supportive of the Department adding the disciplines of operating practices, signal and train control, and hazardous materials to its current oversight responsibilities of the track safety and motive power and equipment disciplines. The owners/operators are much less supportive of these measures than are the supervisors.

According to the respondents, consistency is apparent in the way that regulations are interpreted, both by the state inspectors as well as by inspectors at the federal level. Owners and supervisors submit similar responses to a series of questions concerning this topic.

Overall, both respondent groups do not view the state safety inspection program as being proactive and taking a leadership role in promoting rail safety. Many railroads see this as a role that falls upon themselves. Throughout the questionnaire, and during the face-to-face interviews conducted with approximately one-third of the respondents comprised of owner/operators, the rail companies stress the importance of safety. Most operate in the communities where they live and indicate they feel that they are more than aware of safety problems that may occur on their railroad. They say they recognize that the consequences of an accident are enough to cause them to remain vigilant to the need for safe equipment and tracks. Many of them, however, concede that some short line railroads, operating at relatively slow speeds, do tend to neglect safety more often than larger railroads.

Comments and responses from the Department are made in bold italics throughout the survey and interview summaries.

Survey Abstracts

State and Federal Inspections

All survey respondents report that they have been inspected by state and federal safety inspectors within the last twelve months.

Table 1 Inspected Within the Last 12 Months

(percent responding "yes")

	Total (N=22)	Owners (n=11)	Supervisors (n=11)
State inspectors	100%	100%	100%
Federal inspectors	100%	100%	100%

Benefit of Regular Meetings Between Railroads and Inspectors

Again, using a scale of 1 to 5, where 1 represents not very beneficial and 5 represents very beneficial, the survey participants were asked to rate the benefit of meetings between railroads and state/federal inspectors in providing a team approach to safety issues as well as providing a forum for resolving technical questions. The results are depicted in the two tables below.

Table 11 Benefit of Regular Meetings in Providing a Team Approach

	Total (N=21)	Owners (n=10)	Supervisors (n=11)
1 Not very beneficial	5%	10%	0%
2	5%	10%	0%
3	14%	10%	18%
4	38%	40%	36%
5 Very beneficial	38%	30%	45%

Table 12 Benefit of Regular Meetings in Providing a Forum for Resolving Technical Questions

	Total (N=20)	Owners (n=9)	Supervisors (n=11)
1 Not very beneficial	10%	22%	0%
2	5%	11%	0%
3	10%	11%	18%
4	30%	22%	36%
5 Very beneficial	40%	33%	45%

Benefit to Railroad Industry for NCDOT to Participate in Trade Organizations

Similar to the previous exercise, the respondents were asked to indicate the benefit to the railroad industry to have the participation of NCDOT in such trade organizations as the Rail Association of North Carolina (RANC) and the Southern States Short Line Association (SSSLA). Using the same five-point scale, the results are presented in the two tables below.

Table 13 Benefit for NCDOT to Participate in the RANC

	Total (N=20)	Owners (n=10)	Supervisors (n=10)
1 Not very beneficial	0%	0%	0%
2	0%	0%	0%
3	50%	40%	60%
4	10%	10%	10%
5 Very beneficial	40%	50%	30%

Input into the Federal Regulatory and Rulemaking Process

The respondents were next asked to indicate how much input into the federal regulatory and rulemaking process the railroad industry and labor have. A five-point scale, where 1 represents very little input and 5 represents very much input was used. The responses are distributed among the range of answer choices as illustrated in the two tables below.

Table 9 Input by the Railroad Industry

	Total (N=20)	Owners (n=10)	Supervisors (n=10)
1 Very little input	10%	20%	0%
2	5%	0%	10%
3	55%	60%	50%
4	20%	20%	20%
5 Very much input	10%	0%	20%

Table 10 Input by Labor

Total (N=20)	Owners (n=10)	Supervisors (n=10)	
1 Very little input	5%	0%	10%
2	15%	0%	30%
3	45%	60%	30%
4	35%	40%	30%
5 Very much input	0%	0%	0%

The FRA develops and makes amendments to the existing safety standards through the Railroad Safety Advisory Committee (RSAC). The railroads have input to this process through their industry organizations such as the Association of American Railroads and the American Short Line Railroad Association as voting members of RSAC.

The Traffic Engineering and Safety Systems Branch's Traffic Safety Systems Management Unit of the Department's Division of Highways presently administers the highway/rail at-grade crossing signalization program. This group is making every effort to communicate with the state's railroads on such matters and work to meet their individual needs for signalization improvements at grade crossings.

The Rail Division's Engineering & Safety Branch continues its efforts to consolidate redundant highway/rail at-grade crossings on all railroads. An existing initiative is underway to test and evaluate new technologies at crossings. This program has attracted much national interest and has provided new data to assist in our efforts to provide better protection at crossings, especially along high speed and high density freight and passenger routes. New programs are planned in the upcoming fiscal year to assist the short line railroads in replacing substandard crossbuck signage at crossings along their lines with new highly-reflective signs, and to test low-cost active and passive warning devices at crossings on light density rail lines. The Branch is also working with the state's railroads on agreements that will establish policies pertaining to highway/rail intersections and create partnerships in the maintenance of at-grade crossing surfaces.

Coordination Between State and Federal Inspectors

Using a scale of 1 to 5, where 1 represents very little coordination between state and federal inspectors and 5 represents very much coordination, the respondents were asked to indicate how much coordination exists with respect to conducting safety standard inspections. One-half of the respondents (50%) gave a rating of 4 or 5, indicating that state and federal inspectors are typically in coordination in carrying out safety inspections. Thirty-two percent of the respondents gave ratings of 1 or 2, indicating that there is little coordination between state and federal inspectors.

Table 2 Coordination Between State and Federal Inspectors

	Total (N=22)	Owners (n=11)	Supervisors (n=11)
1 Very little coordination	23%	36%	9%
2	9%	18%	0%
3	18%	18%	18%
4	32%	9%	55%
5 Very much coordination	18%	18%	18%

Duplication of Effort Between State and Federal Inspectors

Once again, using a scale of 1 to 5, in this instance where 1 represents very much duplication and 5 represents very little duplication, the survey respondents were asked to reveal how much duplication of effort exists between state and federal inspectors in carrying out safety standard inspections. Close to one-half of the respondents (45%) gave a rating of 1 or 2, indicating that there is a high degree of duplication between state and federal inspectors, while 32% of the respondents gave a rating of 4 or 5, suggesting that little duplication of effort exists.

Table 3 Duplication Between State and Federal Inspectors

	Total (N=22)	Owners (n=11)	Supervisors (n=11)
1 Very much duplication	27%	36%	18%
2	18%	18%	18%
3	23%	27%	18%
4	23%	18%	27%
5 Very little duplication	9%	0%	18%

Among the respondents who gave a rating of 1, 2 or 3, indicating some level of duplication of effort, more than one-half (59%) said they would be willing to provide written documentation of these occurrences.

Table 4 Willingness to Provide Documentation

	Total (N=17)	Owners (n=10)	Supervisors (n=7)
Yes	59%	80%	29%
No	41%	20%	71%

Tables 2 through 4 address the railroad's opinions of coordination and duplication of effort between the Federal and State enforcement efforts and the railroad's willingness to provide documentation supporting their view. In both coordination and duplication the program scored significantly higher among the supervisors who accompany the safety inspectors during an inspection than with the owners who do not. The owners do however witness the results of the safety inspections in repairs required to bring their operations into compliance with the safety standards. Of the railroads willing to provide documentation supporting their claims of duplication and lack of coordination only two responded for such. One of the respondents provided only a verbal opinion with no supporting documents the other responded with a record of inspections of inspections which were made as a result of numerous complaints and recorded history of non-compliance. The inspections incurred were not uncoordinated but planned inspections to encourage compliance with the safety standards. Even then, the inspectors issued no civil penalties to the railroad for the numerous items of non-compliance discovered during the inspections.

Frequency of Safety Inspections

The survey respondents were next asked to indicate how frequently safety inspections should occur. Annual inspections are preferred by nearly one-half of the respondents (45%), followed by quarterly inspections (32%) and inspections every six months (14%).

Table 5 Frequency of Inspections

	Total (N=22)	Owners (n=11)	Supervisors (n=11)
Once a month	0%	0%	0%
Once a quarter	32%	27%	36%
Once every 6 months	14%	9%	18%
Once a year	45%	45%	45%
Other	9%	18%	0%

State Safety Inspector Ratings

The respondents were asked to rate state safety inspectors in seven key areas. Using a scale of 1 to 5, where 1 represents never and 5 represents always, the respondents provided the following rating scores.

Table 6 State Safety Inspector Ratings
(combined 4 and 5 scores)

	Total (N=21)	Owners (n=10)	Supervisors (n=11)
Professional	91%	80%	100%
Provide useful information	86%	70%	100%
Knowledgeable of regulations	90%	80%	100%
Knowledgeable of new safety techniques	67%	50%	82%
Trained properly	76%	50%	100%
Equipped w/protective clothing	81%	80%	82%
Equipped w/safety equipment	96%	90%	100%

Suggestions to Improve Safety Partnership

In the first open-end exercise of the survey, the respondents were asked to offer suggestions on ways to improve the safety partnership and working relationship between rail companies and safety inspectors. The most notable comments focused on scheduling inspections. Responses included "Let us know when they are coming...", "Provide prior written notification of inspection date, time and place...", and "Have scheduling flexibility."

Also prominently mentioned were comments centering on cooperation and education. A sample of the remarks include "More of a team effort instead of the FRA/State versus rail companies..." and "If rail companies have employees that have problems in certain areas, I think the safety inspectors should hold a class and help educate railroads to what inspectors are looking for."

Other categories include responses that advocate maintaining the status quo and comments that suggest changes to be made.

Table 7 Suggestions to Improve Safety Partnership

	Total (N=14)	Owners (n=8)	Supervisors (n=6)
Scheduling	36%	25%	50%
Cooperation and education	29%	38%	17%
Status quo	14%	0%	33%
Changes	14%	25%	0%
Other	7%	13%	0%

Both of the suggestions made, advanced notification of inspections and training for railroad employees, have been considered and programs are being developed to incorporate training into the program. However, NCDOT has been instructed by FRA that advanced notification of inspections is against program policy. Therefore, we will not be able to proceed with the implementation of this suggestion.

Understanding the Administration of Highway Railroad At-Grade Improvement Projects

The survey respondents demonstrate some degree of understanding in the way that highway railroad at-grade improvement projects are administered. Using a scale of 1 to 5, where 1 indicates little understanding and 5 indicates a clear understanding, 48% of the respondents offered a rating of 4 or 5, while 33% gave a rating of 3.

Table 8 Understanding Administration of At-Grade Improvement Projects

	Total (N=21)	Owners (n=11)	Supervisors (n=10)
1 Little understanding	10%	18%	0%
2	10%	0%	20%
3	33%	45%	20%
4	19%	18%	20%
5 Clear understanding	29%	18%	40%