

TESTIMONY OF GILBERT E. CARMICHAEL
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BEFORE THE SUBCOMMITTEE ON SURFACE TRANSPORTATION
OF THE COMMITTEE ON COMMERCE, SCIENCE AND TRANSPORTATION
UNITED STATES SENATE
JULY 30, 1992

MR. CHAIRMAN AND MEMBERS OF THE SUBCOMMITTEE, I APPRECIATE THE OPPORTUNITY TO APPEAR BEFORE YOU TODAY TO DISCUSS HIGHWAY-RAIL CROSSING SAFETY. THIS IS THE MOST IMPORTANT AND MOST VEXING SAFETY ISSUE FACING THE FEDERAL RAILROAD ADMINISTRATION (FRA) AND THE RAILROAD INDUSTRY, AND IT IS ONE OF THE HIGHEST PRIORITIES OF THE FRA. TO BETTER ADDRESS THE HIGHWAY-RAIL CROSSING PROBLEM, I ESTABLISHED LAST YEAR THE HIGHWAY-RAIL CROSSING AND TRESPASSER PROGRAMS DIVISION WITHIN THE OFFICE OF SAFETY ANALYSIS. WITH ME TODAY ARE BRUCE FINE, DIRECTOR OF THE OFFICE OF SAFETY ANALYSIS; BRUCE GEORGE, CHIEF OF THE NEW HIGHWAY-RAIL CROSSING AND TRESPASSER PROGRAMS DIVISION; AND FRA'S CHIEF COUNSEL MARK LINDSEY.

IN ADDITION TO THE REORGANIZATION OF THE OFFICE OF SAFETY, FRA HAS ALSO IMPLEMENTED A MAJOR HIGHWAY-RAIL CROSSING INITIATIVE ADDRESSING CROSSING ELIMINATION, NEEDED REGULATORY CHANGES, INCREASED ATTENTION TO DRIVER EDUCATION AND LAW ENFORCEMENT EFFORTS, AND INCREASED RESEARCH INTO POTENTIAL TECHNOLOGICAL AND ENGINEERING IMPROVEMENTS, BOTH TRAIN-BORNE AND HIGHWAY. I HAVE BEEN PERSONALLY INVOLVED ON AN ON-GOING BASIS WITH MY COUNTERPARTS IN THE DEPARTMENT OF TRANSPORTATION; THE ADMINISTRATORS OF THE FEDERAL HIGHWAY ADMINISTRATION (FHWA), THE

FEDERAL TRANSIT ADMINISTRATION (FTA), AND THE NATIONAL HIGHWAY TRANSPORTATION SAFETY ADMINISTRATION (NHTSA) IN MAKING HIGHWAY-RAIL CROSSING SAFETY A DEPARTMENTAL ISSUE. THE VOLPE NATIONAL TRANSPORTATION SYSTEM CENTER (VNTSC), UNDER DOT'S RESEARCH AND SPECIAL PROGRAMS ADMINISTRATION, HAS ALSO BEEN HEAVILY INVOLVED IN CONDUCTING A GOOD DEAL OF HIGHWAY-RAIL CROSSING SAFETY RESEARCH.

THIS INCREASED EMPHASIS BY FRA ON HIGHWAY-RAIL CROSSING SAFETY IS CERTAINLY WARRANTED. LAST YEAR, 608 PEOPLE WERE KILLED IN HIGHWAY-RAIL CROSSING ACCIDENTS AND ANOTHER 524 WERE KILLED TRESPASSING ON RAILROAD RIGHTS-OF-WAY BUT NOT AT HIGHWAY-RAIL CROSSINGS. GRADE CROSSING AND TRESPASSER FATALITIES COMPRISED OVER 95 PERCENT OF ALL RAIL-RELATED FATALITIES IN 1991. AS GRIM AS THESE NUMBERS ARE, FEDERAL, STATE AND INDUSTRY INITIATIVES HAVE DRAMATICALLY IMPROVED HIGHWAY-RAIL CROSSING SAFETY, AS SHOWN BY THE RELEVANT ACCIDENT AND FATALITY TRENDS FOR THE PAST SEVERAL YEARS. ((CHART))

HIGHWAY-RAIL CROSSING STATISTICS

<u>Year</u>	<u>Number of Accidents</u>	<u>Number of Fatalities</u>	<u>Number of Injuries</u>
1991	5,386	608	2,094
1990	5,713	698	2,407
1989	6,525	801	2,868
1988	6,615	689	2,589
1987	6,391	624	2,429
1986	6,396	616	2,458
1985	6,919	582	2,687
1984	7,281	649	2,910
1983	7,161	575	2,623
1982	7,748	607	2,637
1981	9,295	728	3,293
1980	10,612	833	3,890
1979	12,509	883	4,378
1978	13,317	1,064	4,447

AS THIS CHART GRAPHICALLY DEPICTS, HIGHWAY-RAIL ACCIDENTS AND FATALITIES HAVE DECREASED 60 AND 43 PERCENT, RESPECTIVELY, SINCE 1978. (AND FIRST QUARTER STATISTICS THIS YEAR REFLECT A FURTHER REDUCTION OF 13 PERCENT OVER THE SAME QUARTER IN 1991.) DURING THE SAME PERIOD, SINCE 1978, EXPOSURE AS MEASURED BY ACCUMULATED HIGHWAY AND TRAIN MILES HAS INCREASED MORE THAN 25 PERCENT. IN SUMMARY, GOVERNMENT AND INDUSTRY PROGRAMS HAVE MANAGED TO EFFECT IMPROVEMENTS IN CROSSING SAFETY EVEN THOUGH THE POTENTIAL FOR ACCIDENTS HAS CONTINUED TO INCREASE.

AS ENCOURAGING AS THESE FIGURES ARE, I CANNOT BE SATISFIED WITH OVER 600 FATALITIES DUE TO CROSSING ACCIDENTS EACH YEAR. CERTAINLY, TO LOVED ONES, ONE FATALITY IS ONE TOO MANY.

BEFORE WE ADDRESS SOME OF THE POTENTIAL SOLUTIONS TO THE GRADE CROSSING PROBLEM, WE NEED TO BE CLEAR ABOUT THE SOURCE OF THE PROBLEM. THE KEY ELEMENT IN GRADE-CROSSING ACCIDENTS IS THAT HIGHWAYS AND ROADS ARE BUILT ACROSS THE PATH OF RAILROAD TRAFFIC, OFTEN WITHOUT SUFFICIENT CONSIDERATION OF THE POTENTIAL DANGER CREATED. IT IS INCONCEIVABLE THAT A ROAD WOULD BE BUILT ACROSS AN AIRPORT RUNWAY, YET IT SEEMS THAT LITTLE THOUGHT IS GIVEN TO PUTTING A ROAD ACROSS A RAIL "RUNWAY". RECOGNITION MUST BE GIVEN TO THE SAME DANGER AT HIGHWAY-RAIL CROSSINGS, BUILDING NEW ONES BUILT OVER OR UNDER THE RAILROAD, AS IN THE INTERSTATE HIGHWAY SYSTEM, AND ELIMINATING AS MANY CURRENT AT-GRADE CROSSINGS AS POSSIBLE.

WE NEED TO EXAMINE THE POTENTIAL TO CLOSE UNNECESSARY CROSSINGS, ESPECIALLY ON HIGH SPEED INTERMODAL AND PASSENGER ROUTES SUCH AS YOU SEE HERE. ((MAP)) THIS IS THE RAIL EQUIVALENT OF THE INTERSTATE HIGHWAY NETWORK. PRECEDENTS HAVE BEEN ESTABLISHED BY BOTH THE INTERSTATE HIGHWAY SYSTEM WHICH CLOSED, CUTOFF, OR GRADE SEPARATED LITERALLY THOUSANDS OF SECONDARY STREETS AND HIGHWAYS, AND BY THE FEDERAL AVIATION ADMINISTRATION'S IMPOSITION OF A \$1,000 FINE FOR ENCROACHING ON AN AIRPORT RUNWAY. TO THAT END, I HAVE SET A GOAL OF GETTING 25 PERCENT OF THESE CROSSINGS CLOSED BY THE YEAR 2000. CROSSING ELIMINATION IS THE ONLY FOOL-PROOF SOLUTION TO THIS PROBLEM.

CURRENTLY, THERE ARE OVER 174,000 PUBLIC CROSSINGS IN THE UNITED STATES AND ANOTHER 115,000 PRIVATE CROSSINGS, A GOOD NUMBER OF WHICH ALLOW PUBLIC ACCESS. THAT'S ABOUT 1.5 CROSSINGS PER ROUTE MILE OF TRACK, AND IT'S FAR TOO MANY. ((PHOTO)) THIS IS WHAT THE RAILROAD ENGINEER SEES WHEN OPERATING A TRAIN. FROM HIS PERSPECTIVE, THE CROSSINGS ARE OFTEN ALMOST OVERLAPPING.

(BESIDES THE VEHICLE GOING AROUND ACTIVE GATES, NINE CROSSINGS ARE VISIBLE IN THIS PHOTO.) THE ENGINEER SEES CLOSE CALLS ON EVERY TRIP. THE HIGHWAY VEHICLE DRIVER HAS THE OPTION OF STOPPING AT THE LAST MOMENT. THE TRAIN ENGINEER, HOWEVER, KNOWS THAT AN EMERGENCY BRAKE APPLICATION, ONCE STARTED, CANNOT BE REVERSED UNTIL THE TRAIN HAS COME TO A COMPLETE STOP, AND HE RISKS A DERAILMENT THAT WILL JEOPARDIZE HIS TRAIN, HIS CREW AND PASSENGERS AND ANYONE NEAR THE RIGHT-OF-WAY. WE CAN BEGIN TO APPRECIATE HIS DILEMMA WHEN WE CONSIDER THAT THE TRAIN MIGHT BE A FULLY LOADED PASSENGER TRAIN, OR IT MAY BE HAULING SOME HAZARDOUS MATERIALS. HE ALSO KNOWS THAT A TRAIN CANNOT COME TO AN IMMEDIATE STOP, AND THAT EVEN A SLOW MOVING FREIGHT TRAIN WILL TAKE UP TO A QUARTER MILE TO STOP. THUS THE LOCOMOTIVE ENGINEER IS HELPLESS TO AVOID A COLLISION EVEN WITH EMERGENCY BRAKING, WHEN A HIGHWAY VEHICLE DOES NOT STOP.

THE MOST SIGNIFICANT POTENTIAL FOR FURTHER IMPROVEMENT IN HIGHWAY-RAIL CROSSING SAFETY WILL BE REALIZED THROUGH A REDUCTION IN THE NUMBER OF CROSSINGS. REDUNDANT CROSSINGS NEED TO BE ELIMINATED. THIS WILL ALLOW TARGETING FUNDS TO IMPROVE THOSE

CROSSINGS THAT ARE NOT CLOSED. STATE, COUNTY AND LOCAL HIGHWAY PLANNERS MUST REALIZE THAT EVERY CROSSING IS A POTENTIAL ACCIDENT SITE. EVERY CIVIL ENGINEER, IN HIS PUBLIC ROLE AS A HIGHWAY ENGINEER, MUST APPRECIATE THIS ACCIDENT POTENTIAL WHEN HE OR SHE SIGNS OFF ON THE VERY EXISTENCE AND THE DESIGN OF EACH OF THESE CROSSINGS.

OUR IMMEDIATE PLAN CALLS FOR FRA TO DISCOURAGE THE OPENING OF UNNECESSARY NEW CROSSINGS AND TO PROMOTE TRADE-OFFS BEFORE THE OPENING OF A NEW CROSSING, E.G., CLOSE TWO OR THREE OTHERS WITH EQUAL OR HIGHER TRAFFIC LOADINGS. WE WANT TO PLANT THE ISSUE IN THE MINDS OF STATE, COUNTY AND CITY OFFICIALS SO THAT CLOSURE IS ALWAYS THE FIRST ALTERNATIVE SERIOUSLY CONSIDERED. IT IS THE RESPONSIBILITY OF STATES TO DETERMINE WHAT CROSSINGS ARE BUILT OR CLOSED. GIVEN OUR GOAL OF ELIMINATING CROSSINGS IN ORDER TO IMPROVE SAFETY, WE WILL BE DEVELOPING A MODEL CODE WHICH WOULD ASSIST STATE AUTHORITIES IN CLOSING UNNEEDED CROSSINGS. WE ARE ALSO ENCOURAGING THE DEVELOPMENT OF ANALYTIC PROCEDURES (DECISION MODELS) TO ASSIST HIGHWAY AUTHORITIES IN DETERMINING THE POTENTIAL FOR CLOSURE. FINALLY, IT MAY BE NECESSARY TO PROVIDE INCENTIVES FOR HIGHWAY AUTHORITIES TO CLOSE CROSSINGS.

AS YOU KNOW, ON FEBRUARY 14, 1992, THREE TEENAGED GIRLS WERE KILLED IN A TRAGIC ACCIDENT AT A CROSSING IN HUTCHINSON, KANSAS. THAT CROSSING WOULD SEEM TO BE AN EXCELLENT EXAMPLE OF A HIGHWAY-RAIL CROSSING THAT COULD BE CLOSED. ((MAP)) STATE AND FEDERAL

RECORDS INDICATE THAT ONLY 36 HIGHWAY VEHICLES A DAY, ON AVERAGE, USE THIS CROSSING. AN ALTERNATIVE CROSSING, A HIGHWAY OVERPASS, CAN BE ACCESSED BY THE CONSTRUCTION OF A CONNECTING ROAD LESS THAN HALF A MILE LONG. THERE WOULD NOT BE A MAJOR INCONVENIENCE CREATED BY CLOSURE. ANOTHER CROSSING ACCIDENT ON MAY 31, 1992 NEAR OSAWATOMIE, KANSAS RESULTED IN THREE MORE FATALITIES. THAT CROSSING ALSO APPEARS TO BE A GOOD EXAMPLE OF A CROSSING RIPE FOR CLOSURE. ((PHOTO)) RECORDS INDICATE THAT ONLY ONE VEHICLE A DAY USES THIS CROSSING, AND ALTERNATIVES ALREADY EXIST.

THESE OFTEN APPEAR TO BE DIFFICULT DECISIONS, BUT WEIGHING THEM AGAINST THE SENSELESS LOSS OF HUMAN LIFE SHOULD LESSEN THE BURDEN. SIMILARLY, WHEN AN FRA STUDY REVEALED THAT FLORIDA'S STATUTE ALLOWING LOCAL JURISDICTIONS TO BAN THE NIGHTTIME BLOWING OF TRAIN HORNS BY INTRASTATE RAILROADS HAD RESULTED IN A TRIPLING OF THE CROSSING ACCIDENTS, I ISSUED AN EMERGENCY ORDER REQUIRING THAT THE HORNS ONCE AGAIN BE SOUNDED. THIS WAS NOT AN EASY DECISION. BUT, DESPITE EMPATHY FOR THE CITIZENS' PROTESTS ABOUT NIGHTTIME NOISE DUE TO THE HORNS, I FELT COMPELLED TO ACT IN THE INTEREST OF SAFETY.

THERE IS ONE OTHER PREFACE I MUST MAKE BEFORE DISCUSSING IN MORE DETAIL OUR CROSSING SAFETY INITIATIVE. ISSUES RELATING TO HIGHWAY-RAIL CROSSINGS ARE ALSO BEING ADDRESSED IN THE COURTS. THERE IS PRESENTLY BEFORE THE SUPREME COURT A CASE (CSX V. EASTERWOOD) DEALING WITH WHETHER THE FEDERAL RAILROAD SAFETY ACT

PREEMPTS A STATE TORT LAW DUTY ON RAILROADS TO SELECT AND INSTALL WARNING DEVICES AT HIGHWAY-RAIL CROSSINGS. THE SOLICITOR GENERAL WILL PRESENT THE GOVERNMENT'S VIEWS TO THE COURT. THOSE VIEWS ARE NOT YET FULLY FORMULATED. WITH THAT BACKGROUND, I WOULD NOW LIKE TO BRIEFLY OUTLINE FRA'S HIGHWAY-RAIL CROSSING INITIATIVE.

REGULATORY INITIATIVES

EVEN THOUGH WE RECOGNIZE THAT AUTOMATED WARNING DEVICES, GATES AND FLASHING LIGHTS INSTALLED AT HIGHWAY-RAIL CROSSINGS ARE HIGHWAY TRAFFIC CONTROL DEVICES, WE MUST ALSO ACKNOWLEDGE THAT THEY ARE ACTIVATED BY THE PRESENCE OF A TRAIN. WITH TODAY'S TECHNOLOGY, TRACK CIRCUITRY IS NECESSARY TO DETECT THE TRAIN'S PRESENCE. AS SUCH, THE RAILROAD MUST BE INVOLVED. RAILROADS, IN FACT, MAINTAIN THESE DEVICES AT A COST WHICH TODAY EXCEEDS \$100 MILLION PER YEAR. RAILROADS HAVE AGREED WITH PUBLIC AUTHORITIES TO MAINTAIN THESE DEVICES. ON JULY 23, 1991, FRA ISSUED A FINAL RULE, "GRADE CROSSING SIGNAL SYSTEM SAFETY," REQUIRING RAILROADS EFFECTIVE JANUARY 1, 1992 TO FILE A WRITTEN REPORT TO FRA WITHIN 15 DAYS EACH TIME A CROSSING SIGNAL FAILS TO ACTIVATE (UNLESS ALTERNATIVE WARNINGS WERE PROVIDED) AND A TELEPHONIC REPORT WITHIN 24 HOURS IF AN ACCIDENT OCCURS CONCURRENT WITH A FAILURE. THIS IS A PERMANENT REQUIREMENT. RAILROADS MUST ALSO FILE, EFFECTIVE JANUARY 1, 1992, WRITTEN REPORTS FOR ALL FALSE SIGNAL ACTIVATIONS (NO TRAIN PRESENT) THAT REQUIRE REPAIR OR ADJUSTMENT TO CORRECT. THIS IS A 30 MONTH REPORTING REQUIREMENT. IN

ADDITION, RAILROADS ARE REQUIRED TO FILE A ONE-TIME REPORT FOR ALL CROSSINGS EQUIPPED WITH AUTOMATIC SIGNAL DEVICES REGARDING THE TYPES OF CIRCUITS AND THE INSTALLATION DATES. THESE DATA WERE DUE TO FRA BY JULY 1, 1992. FINALLY, UNDER THIS REGULATION, RAILROADS MUST FILE THEIR CURRENT INSPECTION, TESTING AND MAINTENANCE PROCEDURES. INITIAL SUBMISSIONS WERE DUE TO FRA BY APRIL 1, 1992; AMENDMENTS MUST BE SUBMITTED AS THEY OCCUR.

FRA ISSUED AN NPRM ON A SECOND RELATED RULEMAKING JUNE 29, 1992. IT PROPOSED THAT ANY TIME A CROSSING SIGNAL FAILS TO ACTIVATE, THE RAILROAD MUST TAKE IMMEDIATE ACTION TO NOTIFY HIGHWAY AUTHORITIES AND TRAIN CREWS, AND IT MUST ARRANGE FLAG PROTECTION FOR MOTORISTS AT THE CROSSING UNTIL REPAIRS ARE MADE. IF A CROSSING SIGNAL FALSELY ACTIVATES, THE RAILROAD MUST IMMEDIATELY NOTIFY LOCAL AUTHORITIES AND TRAIN CREWS, IT MUST SLOW TRAINS AT THE CROSSING TO NO MORE THAN 10 MILES PER HOUR AND, WITHIN TWO HOURS, EITHER CORRECT THE PROBLEM OR ARRANGE FLAG PROTECTION AT THE CROSSING (AT ALL TIMES, NOT JUST WHEN TRAINS ARE PRESENT) UNTIL THE CROSSING SIGNAL IS REPAIRED. THE PROPOSED RULE IS MEANT TO PROVIDE A LEVEL OF SAFETY AT MALFUNCTIONING WARNING DEVICES EQUIVALENT TO THAT PROVIDED BY PROPERLY FUNCTIONING DEVICES.

PURSUANT TO THE EMERGENCY ORDER ON THE FLORIDA WHISTLE BAN, MENTIONED EARLIER, FRA IS ALSO CONSIDERING A RULEMAKING PROCEEDING TO ADDRESS THE ISSUE OF TRAIN WHISTLES NATIONWIDE.

THE ASSOCIATION OF AMERICAN RAILROADS AND THE AMERICAN SHORTLINE RAILROAD ASSOCIATION, IN ANTICIPATION OF THIS, ARE CURRENTLY GATHERING DATA ON WHISTLE BANS THROUGHOUT THE UNITED STATES. THEY EXPECT TO BE ABLE TO SHARE THIS INFORMATION WITH US SOMETIME IN SEPTEMBER.

IN JUNE 1989, FRA RELEASED A FAVORABLE REPORT FOLLOWING AN ASSESSMENT OF THE TEXAS' 1-800 NUMBER CALL-IN SYSTEM WHEREIN THE MOTORING PUBLIC IS ADVISED TO REPORT ANY APPARENT DIFFICULTIES WITH SIGNALS AT CROSSINGS. A FOLLOW-ON STUDY WHICH WILL TABULATE REASONS FOR THE PUBLIC'S PERCEPTION AND RAILROAD RESPONSE TIMES IS BEING FINALIZED.

FRA WILL DO CORRELATION ANALYSIS ON THE WHISTLE BAN DATA, THE CIRCUIT DATA, THE FAILURE DATA, AND ACCIDENT DATA TO BETTER DETERMINE THE CAUSES OF, AND POTENTIAL SOLUTIONS TO, THESE HIGHWAY-RAIL CROSSING ACCIDENTS.

FRA IS INVOLVED IN A LARGE NUMBER OF RESEARCH INITIATIVES INVOLVING CROSSING SAFETY, AND I WOULD LIKE TO QUICKLY HIGHLIGHT SOME OF THESE RESEARCH PROJECTS.

RESEARCH INITIATIVES

OCCASIONALLY, RAILROAD SIGNAL SYSTEMS AND HIGHWAY-RAIL CROSSING SIGNAL SYSTEMS DO NOT PICK UP THE PRESENCE OF A TRAIN. THROUGH A COOPERATIVE RESEARCH PROJECT, THE ASSOCIATION OF AMERICAN RAILROADS AND THE FRA ARE TESTING TO DETERMINE CAUSES OF THIS "LOSS OF SHUNT" PROBLEM.

THE KANSAS PASSIVE SIGN STUDY MANDATED BY CONGRESS IS UNDERWAY AT SIX LOCATIONS IN KANSAS DEMONSTRATING THE USE OF: STANDARD YIELD SIGNS; A NEW YIELD SIGN DEVELOPED BY A CONRAIL/BROTHERHOOD OF LOCOMOTIVE ENGINEERS LABOR-MANAGEMENT GROUP FOR USE AT CROSSINGS ALONG WITH CROSSBUCKS; AND ROADSIDE DELINEATORS. WE ARE ALSO CONSIDERING PROJECTS TO REVIEW RAILROAD ADVANCE WARNING SIGNS AND THE POTENTIAL FOR CONVENTIONAL HIGHWAY STOP LIGHTS TO REDUCE DRIVER INFRACTIONS AT CROSSINGS.

OHIO HAS RECENTLY ANNOUNCED A MAJOR RESEARCH PROGRAM WHICH WILL ADDRESS THE POTENTIAL FOR IMPROVING SIGNS USED AT CROSSINGS WITHOUT AUTOMATED DEVICES. THE PROJECT WILL INCLUDE EXPERIMENTALLY EQUIPPING HALF OF THESE CROSSINGS IN OHIO WITH A NEW TYPE OF RAILROAD YIELD SIGN. FRA WILL ASSIST IN THE ANALYSIS AND ASSESSMENT OF THIS PROJECT. THE UPPER LEFT PHOTO IN THIS GROUP DEPICTS THE NIGHTTIME MOTORIST'S VIEW OF THESE SIGNS.

FRA REGULATIONS REQUIRE THAT EACH LEAD LOCOMOTIVE BE EQUIPPED WITH AN AUDIBLE WARNING DEVICE THAT PRODUCES A MINIMUM SOUND LEVEL OF 96 DECIBELS AT 100 FEET FORWARD OF THE LOCOMOTIVE IN ITS DIRECTION OF TRAVEL. SINCE THIS DEVICE IS INTENDED FOR SAFETY, THE SOUND PRODUCED IS EXEMPT FROM ENVIRONMENTAL PROTECTION AGENCY REGULATIONS. INDUSTRY WIDE STANDARDS HAVE TRADITIONALLY CALLED FOR THE SOUNDING OF THE TRAIN HORN IN A PATTERN OF TWO LONG BLASTS, ONE SHORT BLAST AND AN ADDITIONAL LONG SOUNDING UNTIL THE LOCOMOTIVE IS ON THE CROSSING. HOWEVER, NO MAXIMUM SOUND LEVELS HAVE BEEN DEFINED, AND SOME RAILROADS SOUND HORNS SIGNIFICANTLY IN EXCESS OF 96 DECIBELS. RESEARCH INTO THE MAXIMUM SOUND LEVEL NEEDED FOR SAFETY, AS WELL AS ALTERNATIVE PATTERNS AND TIMINGS, IS BEING CONDUCTED.

FRA IS LOOKING AT THE POTENTIAL EFFICACY OF EXPANDING THE TEXAS 1-800 CALL-IN SYSTEM TO OTHER STATES. THE PROJECT PROVIDES AN EARLY WARNING TO RAILROADS OF EQUIPMENT MALFUNCTIONS BY ENCOURAGING REPORTS, CALLS TO A TOLL-FREE NUMBER, FROM HIGHWAY USERS WHEN EQUIPMENT PROBLEMS ARE PERCEIVED.

ALMOST A DECADE AGO FRA STUDIED THE POTENTIAL FOR ALERTING LIGHTS ON LOCOMOTIVES, AND REFLECTORS ON BOTH LOCOMOTIVES AND FREIGHT CARS. AT THAT TIME, THE AGENCY DETERMINED THAT THE BENEFITS OF MANDATING ALERTING LIGHTS OR REFLECTORS ON RAILROAD EQUIPMENT WERE INSUFFICIENT TO JUSTIFY SUCH ACTION. THE REFLECTIVE INTENSITY OF THE MATERIALS DEGRADED SO RAPIDLY DUE TO WEATHER AND

THE RAILROAD ENVIRONMENT THAT THEIR EFFECTIVENESS WAS MINIMIZED WITHIN SIX MONTHS OF INSTALLATION. EVEN IF REFLECTIVE INTENSITY HAD REMAINED AT NEAR OPTIMUM LEVELS, THE POOL OF POTENTIALLY IMPACTED ACCIDENTS WAS SO SMALL THAT FAVORABLE BENEFIT-COST TRADE-OFFS WERE LACKING. HOWEVER, WITH COOPERATION FROM THE ALASKA RAILROAD, NORFOLK-SOUTHERN CORPORATION, AND THE BURLINGTON NORTHERN (BN) RAILROAD, FRA IS AGAIN STUDYING THE POTENTIAL OF USING MORE EFFECTIVE, MORE MODERN, REFLECTIVE MATERIALS ON RAIL CARS IN REVENUE SERVICE. INTERMODAL UNIT TRAINS OPERATING BETWEEN NORFOLK AND CHICAGO, GONDOLA EQUIPMENT IN GEORGIA AND ALABAMA, AND TANK CARS IN ALASKA HAVE BEEN EQUIPPED WITH REFLECTORS. THE UPPER RIGHT PHOTO IS OF REFLECTORS ON A TANK CAR. A RECENT AGREEMENT WITH BN WILL SOON RESULT IN THE EQUIPPING OF TACONITE CARS OPERATING IN THE NORTHERN TIER (WISCONSIN-NORTH DAKOTA). BN HAS ALSO AGREED TO PARTICIPATE WITH US IN REVIEWING GRAIN CARS WHICH BN INDEPENDENTLY EQUIPPED WITH REFLECTORS STARTING IN 1988.

REGARDING LOCOMOTIVES, WE ARE ALSO CONSIDERING DIFFERENT LIGHTING ALTERNATIVES TO DETERMINE THE FEASIBILITY OF COMBINING THE REQUIREMENTS OF VISIBILITY FOR THE TRAIN CREW AND CONSPICUITY OF THE LOCOMOTIVE. THIS EFFORT IS DIRECTLY RELEVANT TO SENATOR KASSEBAUM'S PROPOSED LEGISLATION, S.2644, THE INCREASED RAILROAD LOCOMOTIVE VISIBILITY ACT, AND I GENUINELY APPRECIATE THE SENATOR'S INTEREST AND INITIATIVE REGARDING CROSSING SAFETY. FRA STUDIED THE USE OF ALERTING LIGHTS SEVERAL YEARS AGO AND COULD

FIND NO ACCIDENT RATE REDUCTION FOR EQUIPPED LOCOMOTIVES VERSUS THOSE NOT EQUIPPED. FRA IS CURRENTLY COMPLETING A SURVEY OF WHAT TYPES OF EQUIPMENT, SUCH AS DITCH LIGHTS, STROBE LIGHTS, OSCILLATING LIGHTS AND OTHER TYPES OF ALERTING LIGHTS, ARE PRESENTLY IN SERVICE OR ARE PLANNED FOR ACQUISITION BY RAILROADS. FOR EXAMPLE, ALL OF AMTRAK'S PASSENGER LOCOMOTIVES ARE EQUIPPED WITH STROBE LIGHTS ON TOP OF THE CAB. BN IS PLACING STROBE LIGHTS LOWER DOWN ON THE LOCOMOTIVE DECK. SEVERAL RAILROADS HAVE PORTIONS OF THEIR LOCOMOTIVE FLEETS ALREADY EQUIPPED AND ARE ORDERING NEW LOCOMOTIVES WITH DITCH LIGHTS, AND SOME ARE RETROFITTING AS LOCOMOTIVES ARE SHOPPED FOR MAJOR OVERHAULS. OTHERS ARE EXPERIMENTING WITH ONE OR A FEW LOCOMOTIVES. THE LOWER LEFT PHOTO SHOWS A LOCOMOTIVE WITH DITCH LIGHTS. BUT BEFORE THE FEDERAL GOVERNMENT MANDATES A MULTI-MILLION DOLLAR LONG-TERM PROGRAM, WE NEED TO BE ABSOLUTELY SURE WE HAVE THE RIGHT FIX, NOT JUST AN APPEALING QUICK FIX. THE COMPILATION OF CURRENT PRACTICES AND ALTERNATIVES WILL BE COMPLETE THIS FALL. FOLLOW-UP RESEARCH WILL THEN BE INITIATED TO REFINE OPERATING SPECIFICATIONS FOR THE MOST PROMISING DEVICES AND TO ASSESS THE EFFECTIVENESS OF THESE ALTERNATIVE MEASURES.

MANY QUESTIONS REMAIN, SUCH AS: HOW BRIGHT, HOW WIDE, WHERE AIMED AND WHERE MOUNTED? ARE STROBE LIGHTS AN ACCEPTABLE ALTERNATIVE? WE NEED TO CONSIDER THE IMPACT ON DRIVERS AND PEDESTRIANS ON PROPERTIES AND ROADS ADJACENT TO RAILROAD TRACKS, AND ON RAILROAD EMPLOYEES. SHOULD THE LIGHTS REALLY BE ON

ANYTIME THE LOCOMOTIVE IS IN MOTION (AS THE BILL CALLS FOR), OR SHOULD ACTIVATION BE TIED INTO USE OF THE TRAIN HORN? DO YARD LOCOMOTIVES NEED TO BE EQUIPPED? WHAT DOES THE BILL MEAN WHERE IT REQUIRES THE SIDE OF THE LOCOMOTIVE TO BE ILLUMINATED? MUST A LOCOMOTIVE BE TAKEN OUT OF SERVICE IMMEDIATELY IF A LIGHT BURNS OUT (AS THE CURRENT BILL WOULD REQUIRE) OR MAY IT BE MOVED TO A REPAIR FACILITY? NO INFORMATION EXISTS REGARDING MAINTENANCE COSTS, REPLACEMENT CYCLES OR SUSCEPTIBILITY TO VANDALISM. THERE ARE MANY UNANSWERED QUESTIONS, NOT THE LEAST OF WHICH IS THE LACK OF KNOWLEDGE ABOUT HOW EFFECTIVE THESE DEVICES MAY BE. THE VOLPE CENTER EFFORT WILL ADDRESS THESE QUESTIONS. WE MUST CAUTION ABOUT QUICK FIXES THAT CAUSE A POOR ALLOCATION OF FINITE RESOURCES AND RESULT IN AN OVERALL REDUCTION IN SAFETY. UNTIL THE RESEARCH IS COMPLETE, WE BELIEVE SENATOR KASSEBAUM'S BILL, THOUGH WELL MEANING, IS PREMATURE.

CROSSING ILLUMINATION (STREET LIGHTS AT CROSSINGS) IS STILL ANOTHER AREA OF FRA INVESTIGATION. RESEARCH HAS BEEN DONE AT KANSAS STATE UNIVERSITY AND IN OREGON FROM WHICH WE HOPE REQUIREMENTS AND SPECIFICATIONS COULD BE DEFINED. THIS BODY OF WORK HAS BEEN REVIEWED, AND A SET OF SPECIFICATIONS WILL BE DEVELOPED. FRA WILL THEN WORK WITH FHWA IN DEVELOPING A PROGRAM PLAN FOR PROPER EMPHASIS ON INCLUDING ILLUMINATION AS A HIGHWAY-RAIL CROSSING ALTERNATIVE. ILLUMINATION COULD BE PARTICULARLY USEFUL AT MANY RURAL CROSSINGS, AS THE LOWER RIGHT PHOTO

INDICATES, BUT A LIMITING FACTOR IS THE AVAILABILITY OF COMMERCIAL POWER.

PROGRAM INITIATIVES

IN ADDITION TO REGULATORY AND RESEARCH ACTIVITIES, FRA IS ALSO UNDERTAKING A NUMBER OF PROGRAM INITIATIVES IN HIGHWAY-RAIL CROSSING SAFETY.

FRA IS HELPING TO ESTABLISH A NATIONAL AWARENESS CAMPAIGN FOR HIGHWAY-RAIL CROSSING SAFETY. OPERATION LIFESAVER, INC. NEEDS TO BECOME A TRULY NATIONALLY RECOGNIZED PROGRAM. TO THAT END, OPERATION LIFESAVER HAS HIRED A FULL TIME MEDIA COORDINATOR TO DEVELOP A NATIONAL CAMPAIGN.

WITH FHWA AND FRA ASSISTANCE, OPERATION LIFESAVER CONTINUES TO PROMOTE TRAINING FOR LAW ENFORCEMENT OFFICERS, ESPECIALLY AT STATE POLICE ACADEMIES. FRA FIELD PERSONNEL OFTEN PARTICIPATE IN THESE PROGRAMS. THE FRA WAS AN EXHIBITOR AT THE 1991 INTERNATIONAL ASSOCIATION OF CHIEFS OF POLICE (IACP) CONVENTION, THE 1992 NATIONAL SHERIFFS' ASSOCIATION CONFERENCE AND AT THE 1992 NATIONAL TRAINING CONFERENCE OF THE FBI'S NATIONAL ACADEMY ASSOCIATES, AND WILL BE AGAIN AT THE 1992 IACP CONVENTION THIS FALL IN DETROIT. ALONG WITH OUR DISPLAY, WE TAKE A COMPUTER SYSTEM TO THESE MEETINGS CAPABLE OF PRODUCING ON-SITE FOR CONCERNED LAW ENFORCEMENT OFFICERS LISTS OF CROSSINGS IN THEIR SPECIFIC HOME JURISDICTIONS. THIS LIST TARGETS THE TOP CROSSINGS

IN TERMS OF ACCIDENT POTENTIAL AND PROVIDES TEN YEARS OF ACCIDENT HISTORY AND SUPPORTING DATA. OFFICERS ARE ENCOURAGED TO CONSIDER ENHANCED TRAFFIC ENFORCEMENT AT THESE CROSSINGS AND TO OPEN A DIALOGUE WITH HIGHWAY AUTHORITIES REGARDING SAFETY IMPROVEMENTS. THESE COMPUTER GENERATED PACKAGES HAVE PROVEN TO BE VERY POPULAR AS INDICATED BY OFFICERS SEEKING US OUT DURING THESE MEETINGS AND BY SUBSEQUENT TELEPHONE AND LETTER REQUESTS FOLLOWING THE MEETINGS.

FRA, FTA AND FHWA JOINTLY SPONSORED THE PRODUCTION OF A 15-PART RAILROAD SAFETY SERIES, EMPHASIZING HIGHWAY-RAIL CROSSING SAFETY AND THE NEED FOR LAW ENFORCEMENT, ON THE LAW ENFORCEMENT TELEVISION NETWORK (LETN). THIS SERIES AIRED JUNE 3 - SEPTEMBER 13, 1991 AND WAS VIEWED AT MORE THAN 2,200 POLICE DEPARTMENTS THROUGHOUT THE COUNTRY. FRA WILL BE ISSUING MORE THAN 1,500 CERTIFICATES FOR COMPLETION OF THIS SAFETY TRAINING TO LAW ENFORCEMENT OFFICERS NATIONWIDE. THE TRAINING ALSO QUALIFIED FOR CONTINUING EDUCATION CREDITS. LETN IS CONSIDERING A SECOND AIRING OF THE SERIES.

IT IS HOPED THAT EMPHASIS ON ENFORCEMENT WILL REDUCE THE NUMBER OF VIOLATIONS SUCH AS THE ONE CAUGHT ON FILM IN THIS PHOTOGRAPH. NOTE THE AUTOMOBILE, WHICH HAS GONE PAST FLASHING LIGHTS AND AROUND A LOWERED GATE, DIRECTLY IN FRONT OF THE TRAIN. IT WAS A VERY CLOSE CALL.

FRA IS ALSO SPONSORING, WITH FHWA AND THROUGH FHWA'S NATIONAL HIGHWAY INSTITUTE, BEST PRACTICES TRAINING IN HIGHWAY-RAIL CROSSING SAFETY FOR SMALL RAILROADS AND LOCAL GOVERNMENTS. IN ADDITION, FRA IS DEVELOPING MINIMUM SIGNING STANDARDS AND WARNING SIGNS FOR PRIVATE CROSSINGS.

DISCUSSION IS ALSO UNDERWAY CONCERNING THE RELATIVE PRIORITY THAT SHOULD BE PLACED ON CIRCUIT UPGRADES VIS-A-VIS INSTALLING AUTOMATED WARNING DEVICES AT ADDITIONAL CROSSINGS. WE THINK THERE IS A REAL NEED FOR CIRCUIT UPGRADES AND MODERNIZATION, AND FRA IS ENCOURAGING WIDER APPLICATION OF CONSTANT WARNING TIME EQUIPMENT. I AM ALSO FIRMLY OF THE BELIEF THAT THERE IS GREAT POTENTIAL FOR NEW TECHNOLOGY DEVELOPMENT AND INNOVATION IN THE AREA OF HIGHWAY-RAIL CROSSING SAFETY. I HAVE, THEREFORE, OPENED A DIALOGUE WITH THE RAILROAD SUPPLY INDUSTRY TO TRY TO PROMPT THIS DEVELOPMENT.

MR. CHAIRMAN, AS YOU CAN SEE, HIGHWAY-RAIL CROSSING SAFETY IS A PRIORITY AT FRA. WE WILL CONTINUE TO PLACE ADDITIONAL EMPHASIS ON THIS PROGRAM, ESPECIALLY ON THE ELIMINATION OF CROSSINGS, AND I LOOK FORWARD TO THE COMMITTEE'S CONTINUING SUPPORT. THAT CONCLUDES MY FORMAL STATEMENT. I WILL BE PLEASED TO ANSWER ANY QUESTIONS.