



U.S. Department of Transportation

Federal Railroad Administration

JUN 2 9 2000

The Honorable Linda J. Morgan Chairman Surface Transportation Board 1925 K Street, N.W. Washington, D.C. 20423-0001 Office of the Administrator

400 Seventh St., S.W. Washington, D.C. 20590



Dear Chairman Morgan:

Pursuant to the Memorandum of Understanding Between the Surface Transportation Board (STB) and the Federal Railroad Administration (FRA) dated May 19, 1998, FRA is forwarding its second biannual status report to the STB covering the safety integration of the Conrail merger (enclosed).

This report, dated June 23, 2000, covers the period of FRA's surveillance of safety integration from May through December 1999. In this second reporting period, formal review meetings have been held by FRA with CSX Transportation (CSXT), Norfolk Southern (NS) and the new Conrail (CRCX, the new AAR reporting designation for the Shared Assets Areas) at approximate bi-monthly intervals. As of December 1999 most of the Safety Integration Plan (SIP) items, as defined in their acquisition filings, had either been closed out or continuing programs (e.g., training) had been put in place to address them. SIP/safety reviews were held in June, July, August, October and December 1999.

During this period FRA's Merger Surveillance Team also completed specific safety reviews of five train incidents that occurred on pre-merger Conrail during the first quarter of 1999, including two collisions, two switching incidents, and a derailment. These resulted in four fatalities. Conrail management provided FRA with detailed investigative information and developed action plans to prevent recurrence of such incidents. FRA had undertaken an extensive, two-week, system-wide review of operating practices on Conrail with a 35-member, multi-regional, operating practices inspection team to assess the overall level of operating safety.

Overall, the safety record of all three railroads since the Split Date has been excellent. However, there have been several systemic safety short falls that have occurred, most notably: 1) information technology (IT) problems of significant proportions resulting in the lack of hazardous materials documentation for trains; 2) a noticeable increase in "FRA recorded inspection defects, particularly during the first four months of the merger"; 3) a number of "near misses" involving potential train collisions; and 4) excessive crew delays and related detention of equipment on-line, particularly hazardous material loads. The IT/hazardous materials documentation problems were so egregious during this period that FRA was compelled to hold a special forum in early November 1999 to address these safety issues directly with CSXT, NS and CRCX officials. A separate "white paper" stemming from the forum on IT issues has been included in the text of this report. FRA has also offered several short- and long-term IT recommendations, and various operational recommendations, for the planning of future major mergers to avoid similar safety shortfalls. The operational recommendations include more advanced safety training of supervisors and more intensive reviews of proposed crew assignments and training needs.

FRA believes that the significant service performance problems documented following Split Date at CSXT, NS and CRCX have impacted safety, i. e., in terms of lack of proper hazardous materials documentation, train crew and other operating employee fatigue, insufficient number of trained employees, etc.

The third biannual report (covering the integration period January through May 2000) is expected to be completed and forwarded to the STB by the end of July. The third biannual report will document several recent operational safety issues which have surfaced at NS and CSXT, i. e., "runaway" trains on mountain grades, continued IT/hazardous materials documentation problems, track geometry and maintenance issues arising at CSXT, and significant blocked crossings occurring in the state of Ohio. Due to the extended completion date of this second biannual report and efforts made to accelerate release of the upcoming third biannual report, FRA believes that it would be in the public's best interest for the STB to release both documents at the same time, if possible. This should place the safety assessment of the overall period of merger integration in its proper perspective. In the interim, FRA will notify STB of any suspect deficiencies or major consequences that may arise.

During this period, FRA and the STB have continued to cooperate in the assessment and progression of the joint Safety Integration Plan (SIP) rulemaking, as well as in monitoring the safety integration of the merger.

Again, I wish to thank the STB for its patience in awaiting the finalization of these very important documents describing the safety integration occurring at CSXT, NS, and CRCX. We look forward to STB's application of these very important SIP findings in the formulation of industry-wide measures to govern and protect all aspects of safety for future major railroad mergers in the United States.

Sincerely,

Jolene M. Molitoris

Jolene M. Molitoris Administrator

Enclosure



U.S. Department of Transportation

Federal Railroad Administration

## Biannual Report to the Surface Transportation Board May - December 1999

## <u>Conrail Merger Surveillance: NS, CSXT, and CRCX</u> <u>Second Safety Integration Plan/Safety Update</u>

For: Surface Transportation Board c/o The Honorable Linda J. Morgan Chairman

(In compliance with MOU of May 19, 1998)

Submitted by: Federal Railroad Administration Washington, D.C.

June 23, 2000

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## **Executive Summary**

On September 4, 1998, the Federal Railroad Administration (FRA) initiated a long-term monitoring program for the Conrail acquisition integration by issuing its FRA's <u>Conrail Merger</u> <u>Safety Assessment Surveillance Plan</u><sup>1</sup>, which set up a 33-member Merger Surveillance Team made up of FRA headquarters staff, deputy regional administrators, specialists, and inspectors. The Team performs regular reviews of the railroads' SIPs, sets up labor/management/public "listening sessions," and conducts both planned and unannounced safety reviews of CSX Transportation (CSXT), Norfolk Southern (NS), and new Conrail (CRCX) operations. The SIPs are "living" documents that undergo continued refinement as conditions at CSXT, NS, and CRCX continue to evolve.

FRA is also responsible for twice-yearly reports to the Surface Transportation Board (STB), the first of which was submitted in April 1999.<sup>2</sup> While not recognized as part of the SIP Process, FRA has provided bi-weekly and/or monthly reports to the STB regarding FRA observations, concerns, and actions in support of the SIP Process. These periodic reports are provided directly to the staff of the Office of Compliance and Enforcement to aid the Board in its continuing oversight of the transaction.

In this second reporting period to STB, there have been formal reviews/revisions of the SIPs following each of the approximately bi-monthly meetings between FRA and the three railroads. As of December 1999, most SIP items with CSXT, NS, and CRCX (the AAR designation for "new Conrail," comprising the jointly-owned Shared Assets Areas defined by NS and CSXT in the acquisition filings) have been closed out or else continuing programs (e.g., training) have been put in place to address them. This report provides a review of progress from May through December 1999.

FRA's Merger Surveillance Team also conducted a special safety review of the five train incidents that occurred on Conrail during the first quarter of 1999, including two collisions, two switching incidents, and a derailment. These resulted in four fatalities. Conrail management provided the Team with detailed investigative reviews and action plans to prevent a recurrence of the incidents. Although the Team could not identify a direct causal relationship between these incidents and the ongoing acquisition integration, FRA also undertook an extensive, two-week, system-wide review of operating practices on Conrail with a 35-member, multi-regional, operating-practices inspection team to assess the overall level of operating safety.

Meetings to perform safety reviews and amend or add to the SIPs were held in June, July, August, October, and December 1999. The next SIP/Safety review meeting was scheduled for Marcy 2000. Overall, the safety record of all three railroads since the Split-Date has been excellent. However, there are several references that must be made that cover the following:

<sup>1</sup> Federal Railroad Administration, "FRA's Conrail Merger Safety Assessment and Surveillance Plan"; September 3, 1998:

<sup>2</sup> Federal Railroad Administration, "Conrail Merger Surveillance; Norfolk Southern, CSX, & CSAO SIP/Safety Update, Period: July 23, 1998 – April 15, 1999", May 4, 1999.

- information technology (IT) problems, and specifically the lack of sufficient documentation for transportation of hazardous materials;
- 2. a noticeable increase in the rate of "FRA noted defects" covering certain inspection categories during the first four months of the integration;
- 3. a number of "near misses" involving potential train collisions; and
- excessive crew delays and periodic, but noticeable, problems related to excessive delays in recrewing of trains within the 12-hour duty time limit, which resulted in excessive online times for loaded cars, especially hazardous materials (HAZMAT) loads.

In a two-day IT/hazmat forum held in early November 1999, and a separate "white paper" on IT issues derived therefrom, FRA outlined its concerns regarding improper HAZMAT reporting and inaccurate train consists and suggested corrective actions. Discussions with the three railroads about the FRA findings and recommendations are continuing as this report is forwarded.

FRA has recommended several specific short- and long-term IT actions to remedy the problems all three railroads have experienced in documenting HAZMAT train placement, and moving HAZMAT through rail yards within regulatory time limits, (48 hours). These recommendations by FRA are as follows:

#### Short-Term:

- CRCX should be treated as a separate carrier for the purpose of interchanging cars. This will
  address a number of problems resulting from the so-called "soft interchange" process now used.
- Senior supervising clerks and yardmasters, on all CRCX work shifts, must be trained to use NS Thoroughbred Yard Enterprise System (TYES) and CSXT systems.
- A standard procedure should be used to manually check cars without proper identification of contents, origin, or destination.
- Exception reports should automatically be generated and then checked against each of the carrier records, if not for all cars, then for cars authorized to carry hazardous materials or for shipper patterns.

Long-Term, the following IT actions are recommended:

- NS and CSXT IT system rollouts should be accelerated where possible to completion no later than mid-2000.
- If CRCX's long-term goal should be for NS and CSXT to integrate their IT systems into CRCX (shared assets) and cease their use of Terminal Rail Information Management System (TRIMS).

- In future acquisitions, proposed post-acquisition systems must be tested against more complete samples of data, and in an environment more closely resembling "live" transactions. Tests carried out by NS and CSXT often involved data samples too small to permit an accurate judgment of accuracy rates.
- Training in any new systems should be completed prior to cutover. Training must include field personnel as well as train and engine crews.

Other operational recommendations by FRA include the following:

- Based upon performance of the three railroads in this acquisition, carriers involved in future
  mergers of this magnitude are advised to conduct <u>more intensive reviews</u> of their proposed
  Operating Plans 1) to identify areas of potential difficulty (particularly IT and HAZMAT
  documentation issues) (and 2) to identify early-on preventive measures prior to the
  implementation of their proposed transaction.
- Railroads engaged in a complex transaction should provide more advanced safety training of supervisory and operating personnel at common or allocated terminals, to ensure adequate staffing and carryover of institutional knowledge--including knowledge of Federal Railroad Safety Laws and Regulations.
- It is evident, based upon the acquisition performance of the three railroads, that a more intensive review of proposed crew assignments and crew training needs to be performed by the railroad prior to acquisition initiation, to ensure that sufficient crews are trained and available to operate rail service as proposed by the merging railroads.

Despite the safety concerns identified above, FRA notes that the safety records of both NS and CSXT have improved. Since the Conrail integration began, the reportable train accidents for both NS and CSXT have improved to the lowest level reported in three years, and total casualties were the lowest ever recorded. Further, during 1999, CSXT did not experience a single employee fatality--an unprecedented achievement for a railroad of its size.

However, FRA believes that the documented service performance problems have impacted safety performance. Therefore, all three railroads should continue to focus upon reduction of dwell times for loaded HAZMAT cars, as well as ensuring appropriate HAZMAT documentation.

Due to ongoing selected safety-related operating problems, FRA will continue its close surveillance into the foreseeable future and will monitor the effects of the acquisition on safety and service.

## Conrail Merger Surveillance: NS, CSXT, and CRCX Second Safety Integration Plan (SIP)/Safety Update

## I. Background

#### A. Federal Railroad Administration (FRA) Merger Monitoring

While acquisitions have long been a part of the railroad industry, FRA became concerned that recent acquisitions involving Class I railroads have resulted in the creation of mega-railroads, which pose new and unique challenges to railroad safety and service. With tens of thousands of employees, and spanning as much as two-thirds of the United States, these new companies put much greater distance between the decision-makers in the corporate offices and the rank-and-file transportation and maintenance workers. The size and complexity of the rail operations on these mega-carriers, in our judgment, poses significant obstacles to effective communications, coordination, and operations execution -- elements that are critical to both railroad safety and service.

FRA also found that the careful integration of corporate cultures can be as important to the success of a railroad mega-acquisition as the integration of route structure, traffic flows, and operating practices. Differences in traditions, values, and expectations among senior management, supervisors, and front-line employees must be acknowledged, and collective efforts must be undertaken to unify these cultures, drawing upon the best practices of each, so that the various elements of the newly merged railroad may operate as a single, seamless entity.

On June 23, 1997, CSXT and NS filed an application with the STB to acquire control of Consolidated Rail Corporation and Conrail, Inc. (Conrail or CR) and to divide the assets, including 11,100 miles of track, equipment, and facilities, between them. Under the proposed acquisition plan, NS would acquire 58 percent of Conrail's assets, while CSXT would acquire the remaining 42 percent. Certain Conrail assets would be contained in three areas of joint operations known as the Conrail Shared Assets Operations (CSAO) in Detroit, northern New Jersey, and southern New Jersey/Philadelphia. CSXT and NS would provide service to shippers in the shared asset areas via their own trains, crews, and equipment, with maintenance and dispatching being provided by a jointly owned successor to Conrail (now designated CRCX). FRA recognized that the complex nature of this merger/acquisition warranted a special effort to address these unique challenges of coordination, communications, and culture.

**Safety Integration Plans (SIPs):** FRA responded to the challenge by conducting a formal safety assessment of recent mega-acquisitions involving the Union Pacific (UP) and Burlington Northern Santa Fe (BNSF) railroads to examine issues and concerns associated with railroad acquisitions of such a large magnitude. FRA then conducted a thorough safety assessment of the proposed Conrail acquisition, including a review of the applicant's Operating Plans and a risk assessment of 61 Conrail, CSXT, and NS line segments. The Department of Transportation (DOT) filing with STB, on October 21, 1997, provided STB with findings and recommendations from the safety assessment. One of the most significant recommendations in the DOT filing was

a request that STB require the acquiring railroads to develop, for the first time ever, **Safety Integration Plans (SIPs)** as a condition of the acquisition to help ensure the safe integration of Conrail properties into their systems. Subsequently, on November 3, 1997, STB issued an order requiring NS and CSXT to prepare their respective SIPs within 30 days.

To aid in the development of the SIPS, FRA established the first-ever **SIP Guidelines**<sup>3</sup> that outlined 13 safety-critical areas that each applicant's SIP would be required to address. NS and CSXT each worked collaboratively with FRA to develop their SIPs and met STB's filing deadline (December 3, 1997). FRA acknowledged in its final briefing with STB that the applicants had developed sufficient SIPs addressing all of the significant safety issues, and that they provided rational approaches for acquisition integration.

On May 19, 1998, FRA and STB executed a Memorandum of Understanding (MOU) providing that, if the Conrail acquisition was approved, FRA would:

- monitor the impact that the integration of operations has on safety
- keep STB informed of progress in implementing CSXT/NS/CRCX SIPs and of any deficiencies or problems, thereby enabling STB an opportunity to exercise oversight authority and take corrective actions to identified deficiencies and address safety problems arising out of the transaction
- provide periodic reports to the STB on the SIP implementation process (at least biannually), including a final report when the proposed integration has been satisfactorily completed

Formal approval of the acquisition was granted by STB on July 23, 1998, with 83 consequential conditions, some of which included:

- Applicants to submit SIPs
- 5-year oversight
- Environmental conditions (some 50 listed actions, many safety orientated)
- Comply with the National Industrial Transportation League (NITL) agreement to include measurable standards for quarterly performance reporting
- Adhere to agreements with Amtrak, the City of Cleveland, railroad labor organizations, and others (many containing important safety elements); and
- Meet with rail labor to form task forces to dialogue on implementation/safety issues

<sup>&</sup>lt;sup>3</sup> St fety Integration Plan Guidelines, Federal Railroad Administration (FRA) Office of Safety, (Washington, DC: November 7, 1997)

As a result of the acquisition, CSXT now operates approximately 4,000 miles of Conrail routes, and has increased its system to 23,000 miles, serving 23 States east of the Mississippi, the District of Columbia, and small portions of Quebec and Ontario. NS now operates about 7,100 miles of Conrail routes, giving it a total system length of 21,600 miles, serving 22 States in the East, plus the District of Columbia and the province of Ontario.

#### B. FRA's Merger Surveillance Team

On September 4, 1998, FRA's Office of Safety initiated its long-term safety surveillance program for the acquisition. FRA's Conrail Merger Safety Assessment and Surveillance Plan was unveiled in an orientation session held at FRA headquarters for CSXT, NS, and CRCX operations and planning officers. Fifteen senior-level officers attended representing all three organizations. Key attendees included:

- CSXT Mr. Frank Pursley Vice President of Operations Support/Safety Integration;
- NS Mr. Chuck Wehrmeister Vice President of Safety and Environmental; and
- CRCX Mr. Ronald Batory Vice President of Operations.

The items contained in FRA's merger surveillance program included:

- The SIPs and accountability worksheets (SIP's) filed by CSXT, NS, and CRCX with FRA, which detail the applicants' allocation of funds, personnel, training commitments, facilities, and other resources
- Current operating safety conditions at CSXT, NS, and CRCX and their acquired properties; safety audits and surveys; FRA's required statistical reporting; and inspections/violations identified by FRA inspectors
- Review of past and ongoing FRA Safety Assurance and Compliance Program (SACP) efforts conducted at each railroad
- Close review of progress made on safety conditions set by STB

Staff members from FRA's Office of Safety have been contacting planning officers from NS, CSXT, and CRCX at regular intervals to obtain updates of their SIPs, identify new safety commitments (SIPs are "living" documents), and assess the status of safety issues and concerns.

The established SIP/Safety liaison review meeting officers for the three railroads were:

1) For Norfolk Southern:	Roger Petersen, General Attorney Bruno Maestri, Vice President, Public Affairs Andy Corcoran, General Attorney David Brown, Asst. General Mg. Northern Region Chuck Wehrmeister, Vice President, Safety
2) For CSXT:	Robert Allen, General Manager Safety, Environment, and Operating Practices Jeff Stephensen, Director, Integration

3) For CRCX: (Shared Assets) Ronald Batory, Vice President Operations Craig Curry, Chief Environmental Officer

FRA designated four Regional Safety Assessment and Surveillance managers and 43 geographically placed acquisition inspectors/monitors, to provide close surveillance of CSXT, NS, and CRCX field integration of the acquisition. <u>Regular, periodic regional reviews</u> are conducted and <u>formal biannual written reports</u> identifying safety integration progress are provided by FRA to STB. Figures 1A through 1D on pages 9-12 show the staffing and organization of the acquisition monitoring activity by FRA, including contacts for each of the three railroads. FRA assigned personnel include deputy regional administrators (Regions 1, 2 and 3), specialists in key areas, and FRA Washington staff from each discipline area.

The most recent SIP reviews were undertaken on December 13, 14, and 15 of 1999. This report covers the period from April to December, 1999.

#### C. General Assessment of Post-Merger Safety-Related Performance

FRA initially requested baseline data on yard and train performance, cars on line, and other data useful in establishing a baseline for measuring safety-related performance. However, this information was never provided by the carriers, and thus FRA lacks a firm basis for comparison of current operating statistics with those of prior Conrail, NS, and CSXT operations.

Table 1, page 13 shows the original data requested from the carriers. Despite the lack of a baseline, trends over the past thirty-one weeks make it fairly clear that service levels have declined, and for the most part remain at or below the values of Day 1. However, the safety record of the two railroads has been exemplary, with NS posting a year-end safety record on its Northern Division (former CR) that was the best in its history. The overall accident/incident rate for the past five years for all three railroads is shown in Figure 2, page 14.

Appendix A contains graphs covering a number of safety statistics for 1999 and prior years, separately for CSXT, NS, and Conrail. Figures for 1999 include Conrail data as a separate Class I railroad for the period from January to June. From June 1 on, statistics for the former CR are included with those of its new owners, and "Conrail" is only the successor terminal operator CRCX. In every area, the safety record of CSXT and NS following the Conrail takeover has been excellent. Although the total number of accidents has increased since 1995, reflecting in part growing traffic, the accident *rate* has declined. The number of rail/highway crossing accidents also has fallen in both absolute and relative terms. The absolute number of casualties has also declined.

FRA continues to closely monitor all three railroads. HAZMAT inspections peaked in late summer, when difficulties with computer systems and HAZMAT reporting became commonplace. Overall, FRA inspections have remained at a high level throughout the Conrail integration period.

FRA has been tracking the safety and service performance of NS, CRCX and CSXT since the "Split-Date" of June 1, 1999. Appendix B contains examples of graphs prepared on a weekly basis since the Split-Date. The graphs in Appendix B are for Week 31 of the Conrail integration, the last full week of 1999.

The graphs show that while the poorest performance on both railroads was in the summer and fall, there was a slow improvement in operating performance in the last quarter of the year. However, cars on line (Figure B-1) were higher than prior to the Split-Date, while system average train velocity remained well below the base of June 1.

Dwell time in major terminals as of December 31 was consistently longer than in June, and time on line for loaded cars was also much longer than during the base period. All told, performance measures in almost every area on both railroads, were lower than in June 1999. The exception is safety, where performance at year-end 1999 was superior to that of early June, and the trend continues to show improvement into Calendar Year 2000.

#### Figure 1A: CRCX SIP Team Surveillance





#### Figure 1C: CSX SIP Team Surveillance



#### Figure 1D Chicago Gateway Team



## Table 1: FRA Requested Safety Statistics, Conrail Merger Integration (From CSXT, NS and CRCX data)

## **Classification of Data Items**

- Beginning Period, June 1, 1999
- Base Period May 1 to 30, 1999
- Report by <u>Division</u> for each Conrail acquired territory or portion of same if incorporated into another NS or CSXT territory
- A separate report for the CRCX
- Separate summaries for reportable accidents/incidents and addition of non-reportables (accountables)
- Separate Report Periods (1<sup>st</sup> 15<sup>th</sup> day of month and 16<sup>th</sup> 31<sup>st</sup> day or end of month)
- Summary Total since "Split-Date" (June 1, 1999)

## **Specific Data Items**

- Number of Train Accidents by Causes: Human Factors, Mechanical & Electrical, Signal & Track, Highway Rail Crossing Impacts, other and Total
- Total Train Miles
- Total Accidents and Total Accidents/Million Train Miles
- Casualties in Accidents/Incidents: Deaths, Injuries, Total Casualties, Casualties Per Million Train Miles
- Total No. Collisions and Collisions Per Million Train Miles
- Total No. Derailments and Derailments Per Million Train Miles
- Total Train Accidents Involving HAZMAT and Per Million Train Miles

Frequency: Ret on zove to June 1, 1999 (Split-Date); monthly

#### Safety Performance

FRA has been able to monitor only data supplied by the three railroads under 49 CFR Part 225, which requires railroads to report accidents and incidents that result in a casualty or exceed a minimum damage threshold. Prior to Split-Date, NS had the lowest accident/incident rates while CSXT had the highest, with Conrail in the middle. As can be seen from Figure 2, the inclusion of 42% of CR has enabled CSXT to slightly improve its total accident/incident rate. For NS, which acquired 58% of a property with a higher accident/incident rate, the effect has been to increase the accident/incident rate. Nevertheless NS remains the safest of the Class I railroads. NS' total accident rate, including the acquired CR territories, remains lower than that for Conrail during its last full year of operation (1998), and NS' Northern Region (former Conrail territory) showed a 30 percent reduction in lost work time accidents/incidents from 1998.

The following three graphs show major safety parameters for the three railroads. Figure 3, page 15 shows accidents per million train miles for the 1995-1999 period. Figure 4, page 15 shows the trend in grade crossing accidents per million train miles for the same period, and Figure 5, page 15 shows total casualties to employees per two million hours worked.

As with the total accident/incident statistics shown in Figure 2, it can be seen that acquiring 58 percent of Conrail, with Conrail's higher accident and incident rates, increased the accident/incident rates for NS, while the combined CR/CSXT rate declined. Totals for the three railroads together, however, are improved over 1998 levels. NS achieved a notable 30 percent reduction in employee casualties on the former Conrail lines in the NS Northern Region, a performance which is reflected in the total casualty figure in Figure 5. Actual numbers of accidents and incidents in each category are shown in Appendix A, which also shows the number of inspections carried out by FRA in each month of 1999.



#### Figure 2: Total Accident/Incident Rates NS, CSXT, and CR

Note: 1999 data include Jan.-Nov. only. Former Conrail accidents/incidents, train miles, and employee hours included with NS and CSXT in 1999. Accident/Incident rate is total number of reported events on each railroad times 1,000,000 divided by the sum of train miles and employee hours. For 1999, numbers for CSXT and NS include former Conrail territory.

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Figure 3: Accidents Per Million Train Miles, 1995 - 1999

Figure 4: Rail/High yay Accidents per Million Train Miles



Figure 5: Employee Casualties per Two Million Hours Worked 1995-1999



Note: Data for Conrail in each of the preceding figures are for the former Conrail. 1999 numbers for CSX and NS include the portions of Conrail that each railroad now operates. 1999 data are for Jan. – Nov. (11 months) only.

#### Safety/Service Related Performance

During the thirty-first week of operations integration (end of December 1991), progress in improving operations performance continued slowly on both NS and CSXT. Safety/Service performance graphs have been generated by FRA weekly since the Split-Date based on data that railroads are required to report to the STB. Graphs for Week 31, the last week of 1999, are included as Appendix B to this report.

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As Appendix B shows, trend lines for some measures through year-end were negative. There was, however, some improvement at specific locations. Yard dwell time, for example, improved sharply in Weeks 23 through 27 at NS's Bellevue Yard (in OH) and at Allentown Yard (PA). However, CSXT's yards at Chicago and Selkirk (Albany, NY), and the NS yards at Conway (PA), and Elkhart (IN) continued to experience longer dwell times than at Split-Date. Thus, through the first seven months of the Conrail acquisition, the public benefits promised in the merger filings by both CSXT and NS were not in evidence.

The conclusion is that as of year-end 1999, although rail safety statistics have been favorable, neither CSXT nor NS can point to sustained overall progress toward the pre-split service performance standards of former Conrail. Excessive dwell time of cars at major yards and lengthy delivery times for hazardous materials are of particular concern because of the potential to adversely impact safety. FRA field inspections during this time period indicated that documentation procedures for hazardous materials were not consistently followed. The accuracy rate of hazardous materials documentation, in general, was lower than that exhibited by Conrail prior to Split-Date.

A comprehensive SIP/Safety review was held with each railroad on October 13-14, 1999, to address overall safety performance. The follow-up two-day meeting on IT/HAZMAT safety issues, held on November 2 and 3, 1999, continued the focus upon resolution of the interconnected relationship of proper car documentation and service improvements.

On November 4, 1999, near Cleveland, OH, an NS machinist was killed while preparing locomotives for service. This was the first train service fatality recorded in the post-split acquired territory. This incident was thoroughly investigated by NS and FRA in the SACP effort and there was some question as to the relationship to the CR acquisition. Results were also discussed at the SIP/Safety review held on December 15, and there was some question as to the relationship to the Conrail integration, as the NS post split crew change point was at a new location.

Into December 1999, FRA field inspectors continued to find defects in train consist documentation with NS HAZMAT movements. FRA inspectors working on NS properties also reported the following:

- · large numbers of trains held out of key NS yards like Conway due to yard congestion;
- · trains moving without proper crew notification of location of HAZMAT cars in trains; and
- increased train handling problems in Harrisburg, PA, and continued long service hours by both management and employees, without time off over extended 12-day periods.

FRA inspectors also confirmed continuing problems at CSXT yard locations, including:

- trains held out of key CSXT yards like Selkirk due to continuing yard congestion; and
- motive power in short supply at certain yards, adding to both delays of shipments and cycles of
  crew related delays and longer service hours.

# FRA statistics on CSXT and NS performance for 1999, when compared to the performance of Conrail during autumn of 1998 (historically the peak season for CR traffic), indicated that both CSXT and NS performed at a lower level than had Conrail.

FRA concerns include potential safety consequences of many new train and engine service employees, as well as, the potential for fatigue among railroad employees working long hours over many consecutive days. Information obtained by FRA inspectors from the NS crew office in Atlanta indicates that many employees in the Northern Region (Conrail acquired territory) had had no days off, except sick days, in several months. Allegations of punitive action by NS against employees who "marked off as sick" on the Harrisburg Division were investigated by an FRA team. The team found no evidence to support the allegations.

The incidence of busted calls (crews called but not used) is also high in the Northern Region. Crews called, but not worked, contribute to crew shortages. The problem has been mis-communication between crew office and train dispatchers, such that crews were called for trains that then did not run.

Both CSXT and NS had predicted a reduction in highway truck traffic as a result of the acquisition, with savings in fuel, highway accidents, air pollution, and public highway maintenance expenses. However, NS' Vice President Finance, in a presentation to Wall Street brokers, indicated that in the first three months following the control date NS had noted a shift of 69,000 former rail carloads to trucks on the highways. FRA agrees with the NS estimate that this loss of traffic equates to about 175,000 truckloads shifted to the highways. The annual rate, if this continues, could divert more than a quarter million rail carloads to an equivalent seven hundred thousand trucks from the NS network alone. While specific numbers are not available, the same sort of diversion has occurred on CSXT. Since trucking accidents per net ton are more frequent than rail accidents, the result of the Conrail acquisition at the end of its seventh month appears to be a worsening of safety on the nation's highways.

Although not entirely acquisition-related, both CSXT and NS reported higher (worse than expected) third quarter operating ratios. While the acquisition of Conrail had been justified by CSXT and NS partly on the basis of an increase in operating efficiency, CSXT's third quarter operating ratio grew from 82.6 percent in 1998 to 88 percent in 1999, and NS' from 75.4 percent to 90.3 percent. Some

of this efficiency loss, according to NS management, has been caused by the loss of export coal traffic and other unanticipated traffic demand changes.

#### Efforts to Improve Rail Safety/Service

#### Railroads Acquire Additional Power and Crews

NS, in the first months following the Split-Date, leased and purchased a total of 668 additional locomotives to address power shortages in its Northern Region (the former Conrail territories). Most leased locomotives came from the Union Pacific Railroad (UP). NS also solicited furloughed and recently retired Conrail and NS train crew employees to work on its Northern Region to assist in returning rail operations to normal. FRA inspectors reported seeing many new train and engine service employees in training on NS' Northern Region, including new hires and transfers from the core NS territories.

CSXT, while suffering less severe crew shortages than NS, also leased 78 locomotives to supplement its motive power fleet.

#### IT/HAZMAT Forum Held with the Railroads

Both railroads responded rapidly to IT problems when they were first discovered; however, it was difficult to determine from Week 1 through 31 results whether NS and CSXT were yet addressing and permanently fixing the root cause(s) of the IT problems. Accordingly, on November 2, an FRA Team conducted an extensive interview at Newark, NJ (adjacent to CRCX's Oak Island Yard) with the chief IT officers of the three railroads to obtain a more complete insight into the causes of the IT problems and any planned fixes. On November 3, FRA conducted a major IT-HAZMAT Forum (also at Newark) in which FRA Monitoring Teams presented case studies of deficient conditions and, in working sessions with the three railroads, moved toward the development of action plans for correcting the problems identified in the case studies. The primary target items determined by consensus for each railroad's action included:

- · Preventing cars from moving without appropriate waybills
- · Reducing the large number of no-bill cars which exist on all three railroads
- Reducing dwell time of cars to comply with the 48-hour HAZMAT rule
- · Training clerical and train and engine crews on the new IT systems, and
- · Enhancing response times by users for the new roll-out IT systems

As a result of these problems, FRA commissioned a "white paper" to examine the fundamental issues and collect evidence of the continuing safety-related documentation problems. Results of this study have been shared with the three railroads and are included in this report.

#### Crew Management and Utilization

Poor crew management and utilization contribute to employee fatigue and also impacted rail congestion. Crew management was a problem on both railroads, but particularly on the NS. While problems persisted during this reporting period at various NS locations such as the Harrisburg area, 18

many other areas reported improvements. NS brought in United Transportation Union (UTU) and Brotherhood of Locomotive Engineers (BLE) representatives to assist the crew callers and dispatcher trainees in helping secure transportation for outlawed crews (crews extended past statutory hours of service). There were some problems with the availability of taxi-cabs to transport outlawed engine crews. However, according to FRA Surveillance Team members, the number of outlawed train crews declined in the fourth quarter of 1999. Improved crew calling, fewer outlawed trains, and efficient transportation services for outlawed crews assisted in addressing fatigue among train crews.

Both CSXT and NS hired new personnel to assist with their expanded operations. CSXT hired former Conrail employees and attempted to keep them in the same locations; this assisted CSXT with the integration of segments of Conrail into their system at locations such as Selkirk Yard in New York. CSXT also placed three former Conrail managers in senior management positions, a move intended to ease systemic problems. CSXT has worked very hard to gain the support of rail labor in its acquisition integration. Friday conference calls between CSXT management and national and local labor leaders continued to strengthen the trust between these two sides and resulted in a positive team effort to resolve some acquisition problems. The carrier has not reported problems with train crews marking off duty excessively, even during the weekends.

As late as October (Week 20), concern remained about excessive hours and inadequate training. FRA field reports from inspectors indicated that in some cases trainees had worked without direct supervision. In other cases, crews were reported to have worked for weeks with no more time off than the eight-hour rest mandated by law. There were also allegations that employees marking off sick had been challenged by NS, especially if the mark-off had been during a weekend. FRA investigated these allegations on the Harrisburg Division and found neither excessive crew fatigue nor punitive actions taken against employees marking off sick.

Much of NS' difficulty with crew calling appeared to be related to start-up problems in implementing new crew calling software while depending upon poorly documented crew databases. Some crews were called for trains for which they were not "qualified" under either railroad rules or FRA rules. Some crews were even called while they were already working. This problem manifested itself early in June and persisted for an extended period. However, by December, FRA inspectors saw little evidence that the problem remained.

Crews were not the only ones working extended hours during the first months. FRA investigators reported that managers at the Atlanta crew dispatching office also worked long hours, and in the early months showed signs of physical exhaustion.

#### Grade Crossing Blockages Due to Congestion

There have been a significant number of reports of crossings being blocked for extended periods of time, especially in parts of Ohio. Although this is certainly not a new problem, it is no longer confined to isolated incidents. The problem has become more widespread and the number of occurrences has increased dramatically since the June 1 Split-Date. Although the situation improved as the merger integration proceeded, the crossing blockage problem remained at an unacceptably high level at the end of 1999. Train delays due to rail traffic and facility congestion, particularly in the Midwest, directly contributed to this problem.

Of the two railroads, CSXT appeared to be having the most problems. These issues were discussed with CSXT at the SIP/safety reviews held at Harrisburg on August 26, and in October in Washington.

#### Safety Reviews/Actions

Safety Integration Plan (SIP) Reviews: FRA continues to closely monitor the safety aspects of the acquisition. In ad ition to site inspections and labor listening sessions conducted by its 43-member Surveillance Team, FRA has participated in weekly conference calls with CSXT and NS senior management and labor leaders. Furthermore, in late 1999, FRA completed the following reviews of the implementation status of the Safety Integration Plans (SIPs) and addressed safety concerns identified by FRA's Surveillance Team:

- October 12, 13 CRCX, CSXT, and NS reviews were held at FRA's offices in Washington, DC
- The final 1999 SIP/Safety reviews with the three railroads were carried out on December 13 with Conrail (CRCX) at Philadelphia, December 14 with CSXT in Jacksonville, and December 15 with NS in Washington.

FRA's Surveillance Team has been instructed to address safety concerns with local supervision and also notify FRA's SIP Team Leaders so that the concerns may be brought to the attention of senior railroad managers to ensure appropriate remedial actions are taken and to ensure local problems are not of a systemic nature. FRA has not seen an overall breakdown in safety; however, acquisition-related problems appear to have played a role in several safety incidents. FRA remains alert to potential problems with crew management, information technology, and continued congestion. There clearly could be safety impacts if the railroads are not vigilant in addressing these issues.

Discussion with NS at the SIP/safety review in Week 19 covered FRA inspections and violation reports on the Southern Tier around September 30. However, five weeks later, FRA's field inspections continued to report a range of minor to more serious violations of trains moving without proper HAZMAT documentation. FRA has attempted to assist both CSXT and NS in correcting non-compliant conditions when they are found.

To improve the timeliness of accident reporting and analysis, FRA asked each railroad to individually consider a bi-monthly incident reporting process for former Conrail territory. This will make critical data on safety statistics available much faster and may, therefore, allow for a more

thorough analysis of trends and possible preventative actions. Each railroad is considering a response that best matches their data collection procedures, since the requested data parallels items that they already collect for internal management purposes. CRCX is providing very detailed safety data on a monthly basis. Reporting by CSXT and NS has been more limited.

NS announced in October that \$250 million would be committed to acquisition-related service and quality improvements in FY 2000. This appears to be in response to a commitment made in the 1997 application to acquire Conrail. The modified program should help relieve congestion at a number of key locations, particularly:

- the Penn Route east-west from New Jersey through Philadelphia and Harrisburg;
- NS's core route from Bellevue to Columbus;
- the new connection near Oak Harbor, east of Toledo, OH;
- the bypass at Atlanta;
- the planned new connections at Cloggsville and Vermillion, OH.

## **II. SIP/Safety Performance Progress Reports**

As stated earlier, FRA is responsible for monitoring each railroad's performance against SIPs, conducting periodic meetings with the three railroads to assess progress.

The following sections will review the performance to date of all three railroads in the following major SIP areas:

- Corporate safety culture
- Training to meet the needs of the acquisition
- Operating practices
- Motive power and equipment
- Signals and train control
- Track and structures
- Hazardous materials handling and procedures
- Dispatching operations
- Highway/rail grade crossing safety
- Allocation of personnel
- Employee quality of life
- Passenger and freight service interaction
- Information system compatibility and performance

Some information in these areas is considered proprietary business information by the railroads, and thus, some details have been omitted from the following discussions.

#### A. CSXT SIP/Safety Performance

Prior to Split-Date, CSXT committed to a total of 218 action items in the 13 areas covered by its SIP. As of the end of **December 1999, 32 items remained outstanding**. The current status of the CSXT SIP program is as follows:

#### **Corporate safety culture**

CSXT has taken a pro-active and innovative approach to safety. Prior to the Split-Date, CSXT announced a new cooperative program with operating unions, aimed at education, counseling, and performance improvement of operating employees involved in rules violations. Each CSXT region also has a Director of Safety Culture, whose objective is to ensure that safety is always the first consideration in job performance.

Safe job procedures (SJPs) and a new, unified CSXT Safe Way rulebook covering both former CSXT and former Conrail territories have been completed and are being distributed.

#### Training to meet the needs of the acquisition

Training programs are in place to instruct both former Conrail and CSXT employees on the proper procedures for performing their jobs in the merged company. Conrail conductor on-the-job training has been harmonized with CSXT practice. Other training initiatives are covered in the activity-specific areas below.

#### **Operating practices**

A single set of operating rules for CSXT and the former Conrail territory has been completed and distributed. New timetables have been issued in a single, consistent format for the acquired Conrail territories. Conrail territories will retain Northeast Operating Rules Advisory Committee (NORAC) rules; however, results of operational testing of former Conrail crews will be entered into the CSXT reporting system for record keeping purposes.

A "train the trainer" program has been implemented to cross-qualify former Conrail and former CSXT supervision on both sets of rules (CSXT and NORAC) where supervision co-exists on a single service lane.

Cutover to CSXT "Transportation Employees Calling System" (TECS) was completed before December 1, 1999. Forty-one clerical and seven supervisory crew dispatching positions have been transferred to Jacksonville to support expanded crew management functions.

#### Motive power and equipment

Various improvements to car and locomotive maintenance facilities at Selkirk, Buffalo, New York and Avon, Indiana, have been completed. These improvements should increase efficiency and safety at these facilities.

CSXT's equipment and shop certification process is being implemented at Conrail facilities during 2000. Non-field mechanical managers have been used as liaison between former Conrail field forces and Jacksonville supervision; these "transitional" positions moved to Jacksonville effective August 26, 1999. This proved to be more effective than continuing to maintain two operations centers.

CSXT has implemented an ongoing training program for former CR mechanical personnel. At the same time, the workforce at the Huntington, West Virginia heavy repair locomotive shop has been increased by more than 100 hires, with additional staff increases to be made if necessary.

Finally, all Conrail locomotive fueling facilities have been converted to use of the Snyder II automatic fuel cut-off system. This addresses an environmental concern expressed during the merger hearings.

#### Signals and train control

Allocated staff at former Conrail's Signal Shop at Columbus, Ohio have been relocated to the CSXT facility at Savannah, Georgia. All former Conrail Communication and Signal (C&S) employees now with CSXT have been safety-certified by CSXT.

#### **Track and structures**

CR track and structural rehabilitation programs have been combined with the CSXT program. Review of track inspector territories and an implementation of the CSXT switch inspection program on former CR territory is underway. All former CR bridges now on CSXT have been inspected. CR and CSXT training programs for bridge and track inspectors are being evaluated, and best practices from each will be combined into a new program. A consolidated bridge inspection standard, and a consolidated reporting system, are now being implemented.

During 1999, a "Best Practices" team was organized by CSXT to study the CSXT and CR maintenance-of-way (M-O-W) procedures. The task of this team was to develop uniform policies for the newly merged system based on the best practices of each railroad. CSXT also established a training program for roadmasters and assistant roadmasters for the purpose of teaching adherance to the published procedures and practices. The first class completed the four-week course in early December 1999.

In 1997, prior to the acquisition of Conrail, FRA became concerned about track conditions on CSXT when track-caused train accidents increased 59% from 1996 (from 54 to 86). FRA undertook a comprehensive review of CSXT track under the FRA Safety Assurance and Compliance Program (SACP). As a result of this audit, CSXT produced an Action Plan to improve track maintenance and inspection practices. However, while defects found by FRA inspectors declined by 12.5% in 1998, track-caused accidents actually increased slightly.

In preparation for the Conrail acquisition, FRA increased its inspection activity on CSXT by 23% in the first six months of 1999. Defect ratios did not improve, and there was only a slight decline in track related accidents. Many of the track-caused accidents were due to wide gage, a condition where the distance between the rails exceeds allowable standards. The second leading cause was found to be defective switch points and track hardware at turn-outs. These derailment causes are easily preventable, and indicate a lack of quality in track inspection and maintenance practices.

On September 13, 1999, CSXT responded to FRA with a written Safety Action Plan addressing FRA's findings and comments concerning staff allocation. In addition, a new policy was adopted in 1999 to expedite hiring of M-O-W employees. Despite these actions by senior CSXT managers, FRA continued to receive reports at "listening sessions" from labor and first line supervisors that there were manpower shortages at a number of locations. These reports were supported by FRA's own observations that track conditions appeared to be deteriorating on parts of CSXT's network.

FRA will continue to closely monitor CSXT track conditions during 2000.

#### Hazardous materials handling and procedures

CSXT has adopted Conrail's rail car inspection process, which aimed to educate shippers on safe and proper car loading procedures. The CSXT Customer Service Center has been expanded to handle the former Conrail territories, with additional clerical and supervisory positions added. An upgrade and integration of the multimedia training programs formerly offered by both railroads is underway.

A decision was made in March 1999 to retain Conrail HAZMAT documents on former Conrail territories until the CSXT train management system is cut over. As mentioned earlier, FRA has documented a number of problems with current methods of identifying and tracking HAZMAT shipments.

#### **Dispatching operations**

CSXT will continue to use Conrail dispatch centers at Albany and Indianapolis for at least three years. Territories were realigned as of September 1999. Dearborn, MI, personnel will continue to handle field or system changes as necessary. Former CR dispatching centers will continue to maintain paper dispatching sheets.

#### Highway/rail grade crossing safety

Installation of signage referring drivers to the CSXT emergency number was completed on STBmandated segments in August 1999. CSXT crews continue to work on other segments. The expected completion date is June 2000. CSXT will add staff and computer work stations as needed to handle additional call volume.

#### Allocation of personnel

A number of former Conrail senior officers were hired by CSXT prior to the Split-Date. A new management structure was put in place during the fourth quarter of 1999. Reassignments of operating and maintenance personnel conformed to pre-acquisition filings with the STB.

#### **Employee quality of life**

Conrail's Initiative for Mental and Physical Awareness on Conrail (IMPAC) program remains in effect on former-Contrail territory. The CSXT Operation Redblock drug and alcohol program has been extended to Conrail.

#### Passenger and freight service interaction

Current Conrail practice for operational testing of Amtrak and commuter rail crews operating on Conrail will remain in place; best practices will be identified and implemented by June 2000.

#### Information system compatibility and performance

Conrail data has been migrated to CSXT information systems. Intermodal terminal operations, field operations, and industrial and local train service support were rolled out prior to year-end 1999. A single integrated IT platform across CSXT and former Conrail is now in place. (See Section IV, page 38, for details of the extensive IT/HAZMAT safety issues review conducted by FRA).

#### **B.** Norfolk Southern SIP/Safety Performance

Prior to Split-Date, NS committed to a total of 85 items in the 13 areas covered by their SIP. Of these 85 items, 37 have been completed and 22 are designated as ongoing items. Most of the ongoing items are training programs which must continue indefinitely; a few are capital investments for which planning and design must still be completed. This leaves a total of twenty-two outstanding action items as of the end of December 1999. Some are minor. Open and recently closed items are discussed below.

#### **Corporate safety culture**

Prior to Split-Date, NS began a major effort to educate CR employees joining NS on the NS safety culture. This effort is ongoing and has shown results. The NS Northern Region (former Conrail) achieved for the June – December period its best safety record ever, with total accidents and incidents some 30% below Conrail's level for the prior year. An NS Web page has been developed to provide communications concerning the Conrail transaction.

Well before this Conrail transaction, NS adopted "Six Tenets of Safety" as NS policy. An NS booklet based on these tenets, "Six-Point Action Plan for Safety of Operations" was distributed in the NS Northern Region. A new Northern Region Safety Committee was been formed to represent former CR lines acquired by NS.

At the end of December 1999, NS' preliminary reportable injury ratio (injuries per 200,000 manhours) was 1.22, the lowest among Class I railroads.

#### Training to meet the needs of the acquisition

NS has implemented a continuing effort to identify and implement "best practices" in many areas of operations. Training of employees in many areas, from clerical to operations and crafts, continues. Dispatcher training has not yet been consolidated at NS' McDonough, Georgia facility. However, dispatchers trained at McDonough for Northern Region positions are being trained on NORAC rules.

Train and engine service training will continue to be carried out both at McDonough and at Conrail's Conway facility. Additional simulators are being purchased for Conway, and the CR and NS training materials are being harmonized.

Conrail facilities at Elkhart, Indiana and Hollidaysburg, Pennsylvania will be used for all air brake, welding, and freight car repair training. NS has elected to use both the CR facilities and the CR curriculum following a "best practices" review.

#### **Operating practices**

NS' Total System Accident Reporting (TSAR) system was made available on acquired CR territories as of Day 1. A computer based training program (CBT) and a training manual have been developed, and mainframe access has been provided at all CR locations.

NS' alcohol and drug testing and reporting policies have been extended to the acquired territories. NS' third-party laboratory has replaced Conrail's contractor. The NS Drug and Alcohol Rehabilitation Services (DARS) have been extended to Conrail territory.

Following a comprehensive review that identified all locations where current NS and CR employees had to operate over unfamiliar territory following Day 1, NS implemented a schedule of familiarization and training as appropriate. Training began in the first quarter 1999, and continues as necessary. Effective January 1, 2000, NS safety and general conduct rules were implemented on former Conrail lines.

NORAC operating rules will remain in effect on NS-acquired lines for a minimum of one year.

Operating timetables in the NS Northern Region remain in CR format. NS is planning to revise its operating timetables to a format very similar to that of the current Conrail timetables. The NS aim is to develop a single, standard timetable format for the railroad.

#### Motive power and equipment

The NS locomotive fleet was augmented with 116 new locomotives in 1998 and another 150 through years end 1999. No locomotive retirements were made during these years. In addition, NS leased locomotives as necessary during 1999 to keep the railroad fluid. It should be noted, however, that NS filings with the STB had predicted as a benefit of the merger a net reduction of the combined NS/CR locomotive fleet by 268 units. It appeared as of year-end 1999 that NS was operating a locomotive fleet 668 units larger than before the acquisition.

#### Signals and train control

NS has reorganized for mer CR C&S employees into an NS-style organization. Governing labor agreements are former Norfolk & Western agreements, which have created some changes in titles and territories. Agreement has been reached with both International Brotherhood of Electrical Workers and the Brotherhood of Railway Signalmen to implement these changes on the acquired CR lines.

NS plans to incrementally implement revised signal color conventions on the NS Northern Region.

NS and CR research and development activities related to communications and signals have been combined in order to promote future research efforts. The Harrisburg B Manassas test of Positive Train Control (PTC) technology is now underway. A pilot project is scheduled for fourth quarter 2000.

#### **Track and structures**

Through the end of 1999, NS made no workforce reductions in former CR territories. Regional and system gang arrangements were changed to reflect the inclusion of 58 percent of former Conrail trackage into NS. Field line maintenance organization, however, will remain unchanged through at least 2000.

NS committed to evaluate the need for upgrading bridges on lines experiencing significant traffic increases; any investments will be subject to the approval of the Year 2000 budget. However, for the first year following the acquisition, NS will base its capital programs for the Northern Region or. recommendations furnished by Conrail.

Conrail's Canton Roadway Equipment Shop was closed on June 1, 1999, and all work is now performed by the NS shop at Charlotte.

#### Hazardous materials handling and procedures

NS incorporated Conrail hazardous materials staff into its existing organization. Procedures were established to pass information from Conrail's Customer Service Center in Pittsburgh to NS HAZMAT staff as necessary, pending closure of the Pittsburgh center.

Due largely to problems in ensuring that proper HAZMAT data is incorporated into waybills on the acquired territories, NS has experienced difficulty in properly moving, tracking, and monitoring hazardous materials.

The FRA surveillance team has found that IT failures have required much more manual intervention by railroad employees than prior to this transaction. The resulting errors, including lack of proper documentation, improper car placement in trains, and other problems, may have been avoided in part if a different approach had been used to integrate the post-split IT processes. NS believes that, excluding initial errors in the early months, these problems were primarily due to human failures in following proper procedures and a lack of familiarity with data systems on the part of CRCX employees. FRA firmly believes that in future mergers greater emphasis needs to be focused on IT data sampling and system trials, data accuracy from the various reporting areas, and the day-one start-up system execution.

#### **Dispatching operations**

NS will retain the Conrail Dearborn and Pittsburgh dispatching offices for at least three years. These will be integrated into the NS dispatching system when upgrading of dispatching hardware and software is undertaken in the near future. A new dispatching center was built at Harrisburg for dispatchers formerly located at Mt. Laurel, New Jersey on Conrail's Philadelphia Division.

NS plans a "virtual consolidation" of dispatching functions, but the railroad will continue to be dispatched from a number of geographic locations as it is now. NS will extend its new dispatching system to former Conrail territories following its implementation on NS proper; the process is currently scheduled for first quarter 2003.

#### Highway/rail grade crossing safety

Conrail's grade crossing inventory data was integrated with NS data prior to Day 1. Pursuant to an acquisition condition set by the STB, NS installed signage warning of train traffic increases at all grade crossings on 45 line segments prior to Day 1.

NS has extended its 800 number coverage to all Northern Region grade crossings; signage is in place.

#### Allocation of personnel

Soon after the control date, NS put in place a Northern Region management team consisting of senior NS managers. During the same period, some senior Conrail staff were hired by NS.

#### **Employee quality of life**

NS has hired nearly 2,500 train and engine service personnel. However, due in part to business conditions that necessitated changes to operating plans, and in part to train delays, there were spot crew shortages at a number of system locations through the end of 1999.

Crew calling functions were centralized at Atlanta, and work continues to better integrate crew calling with train operations. A problem has been that some crews were called too early or too late for each assignment rather than on time.

#### Passenger and freight service interaction

NS ensured that by Day 1, all NS locomotives operating on Amtrak's Northeast Corridor were properly equipped with cab signals and speed limiters as required. Sufficient NS crews have been trained in NORAC rules to operate these trains.

Due to the operational problems experienced by NS after Day 1, on-time performance of Amtrak trains suffered during much of 1999. As NS service stabilized around year-end, Amtrak's problems lessened and schedules became more reliable. NS has instituted a cooperative program with Amtrak to ensure timely performance of Amtrak trains on the Northern Region.
#### Information system compatibility and performance

On July 26, NS began its IT integration by rolling out its Thoroughbred Yard Enterprise System (TYES) at Hagerstown, Maryland and Lancaster, Pennsylvania. Implementation systemwide was originally scheduled to last well into 2000. As an interim measure, NS had expected to use the Conrail TRIMS train and yard management system on most of the Northern Region (former Conrail lines) for a few months. However, problems in linking TRIMS data to NS' Thoroughbred Yard Enterprise System (TYES) resulted in "lost" and mis-routed cars and delayed trains. NS' response was to accelerate the TYES rollout to address IT problems. The rollout was completed in mid-December, ahead of the expedited schedule. This expedited rollout corrected many of the data problems that plagued operations in the beginning months following split.

With the completion of the TYES rollout, all Conrail customer service personnel at Pittsburgh who chose to work for NS have been relocated to the NS customer service center in Atlanta.

NS has also committed to add any new information technology initiatives to the SIP for monitoring by FRA.

# C. Conrail (Shared Assets) SIP/Safety Performance

As of the end of December 1999, 17 of the CRCX SIP action items identified prior to Split-Date have been completed. Three are classified as "ongoing". The remaining three involve information systems integration with CSXT and NS, and the installation of cab signals on CRCX-assigned locomotives. Both are dependent on the parent roads' schedules and staff availability. The following is a summary of open and recently completed actions in thirteen areas.

#### **Corporate safety culture**

Successor Conrail continues to maintain a good safety record, comparable to those of other terminal and switching roads.

#### Training to meet the needs of the acquisition

Some of Conrail's training needs are handled by its parent companies, NS and CSXT. The greatest problem Conrail has experienced has been training of locomotive engineers. Due to its role as a switching and terminal road, Conrail has experienced difficulty in getting its engineer trainees the 240 "throttle hours" required to qualify as an engineer. CRCX was experiencing difficulty in securing sufficient throttle hours to qualify new engineers, due to the short distance traveled on most jobs. A revised locomotive engineer training plan has been submitted to the FRA to address this problem.

#### **Operating practices**

Conrail employees continue to use the NORAC operating rules. CRCX has set up a rigorous and apparently effective efficiency testing program, in which supervisors check the performance of operating employees.

#### Motive power and equipment

CRCX motive power has been allocated from the fleets of the two owners, and except for light running repairs, will be maintained by them.

#### Signals and train control

CRCX dispatching is handled from the former Conrail Philadelphia Division dispatching office in Mt. Laurel, New Jersey. Former Conrail territories were realigned by September 1999 to reflect the division of Conrail by NS and CSXT. At that time, Detroit Shared Asset Area control was moved to Mt. Laurel, and the Mt. Laurel center was realigned to cover the North and South Jersey and Pennsylvania Shared Asset Areas.

#### **Track and structures**

The CRCX capital program is controlled by its owners. The M-O-W operating forces will continue in their Conrail organization, with territories adjusted to reflect the scope of the Shared Assets Areas.

#### Hazardous materials handling and procedures

CRCX will be using its pre-existing but revised procedures and software. These are certified as in compliance with FRA requirements.

As of year-end 1999, problems continued with "no-bill" cars (cars pull/d from customers before paperwork was transmitted to CSXT or NS, who handle billing). This problem is discussed in more detail in Section IV of this report, Information Technology Issues.

#### **Dispatching operations**

Through year end 1999, congestion continued on CRCX in northern New Jersey. Oak Island Yard is experiencing heavier traffic than anticipated, in part due to routing changes brought about by the acquisition. At the October Safety Integration Plan (SIP) review held by FRA with CSXT, NS, and CRCX in Washington (Tuesday and Wednesday, October 12 and 13, 1999), CRCX stated that they were still receiving many trains at Oak Island "which required non-planned re-switching." Crew shortages on CRCX were exacerbated by the need to relieve crews on NS and CSXT trains which had reached the 12-hour limit.

#### Highway/rail grade crossing safety

As a condition of the purchase of Conrail, CSXT, NS, and CRCX were required to improve grade crossing protection and install signage warning of increased train traffic at a number of grade crossings. This work was completed in the Shared Assets Areas in late 1999.

#### Allocation of personnel

Crew shortages continue to be a problem for CRCX, due in part to the use of CRCX crews to recover outlawed road trains of NS and CSXT. CRCX has also had to perform non-planned switching for NS and CSXT at Oak Island. Original staffing levels in the operating plan called for Oak Island to serve only as an origin/destination yard, with blocks built only for outbound trains of the parent companies or for local delivery. Instead, due to congestion elsewhere, through trains have had to be classified at Oak Island. As operations return to a more normal state, this problem should decrease.

## Employee quality of life

Crew shortages have caused some difficulties, but this problem was on its way to resolution by yearend, through changes in the locomotive engineer certification process and a return to more normal operations by CSXT and NS.

#### Passenger and freight service interaction

CRCX dispatches New Jersey Transit commuter trains on parts of its network in New Jersey, and Amtrak trains in the Detroit Shared Assets Area. CRCX also operates on local commuter rail lines and on part of Amtrak's Northeast Corridor. However, no problems with passenger/freight interference have been documented by FRA.

#### Information system compatibility and performance

CRCX has continued to use the Conrail TRIMS system for yard management. The unreliability of the so-called "soft interchange" of traffic with CSXT and NS has contributed to operating difficulties.

Problems with computer software and IT systems resulting in improper classification, routing and blocking of freight cars have been a major cause of traffic congestion, particularly on CRCX. Both NS and CSXT have created new paths for sharing information necessary for the movement and routing of traffic on the former Conrail territories without divulging proprietary billing and marketing information to a competing carrier. The former Conrail TRIMS system has continued in use by CRCX for inventory and car reporting. However, CRCX employees reported difficulty in obtaining from CSXT and NS systems the information needed to assure proper car placement in trains.

Additional training, modifications to computer systems in use, and the completion of the TYES rollout by NS have addressed many of these problems. (See Section IV for details of the extensive IT/HAZMAT safety issues review conducted by FRA).

# **III. Metropolitan Safety/SIP Issues**

Changes in traffic patterns resulting from the breakup of Conrail focused the attention of the acquiring railroads, the Surface Transportation Board, the Federal Railroad Administration, and local officials on several critical areas. These included:

- The Cleveland terminal area
- The Buffalo terminal area
- · Chicago terminals and interchange with Western ra Iroads
- · Line segments on which traffic was expected to greatly increase

FRA's filing with the STB during its hearings on the proposed takeover of Conrail identified a number of line segments on which traffic was expected to increase following the completion of the Conrail acquisition. FRA asked the STB to impose special conditions to address concerns over these line segments.

The STB "Appendix Q" conditions dealt with the environmental and safety consequences of changes in the volumes of train traffic, and required actions ranging from warning signs at grade crossings, to improvements to crossing protection, to measures to reduce noise on rail tracks and requirements that specific outreach programs to local emergency management agencies be undertaken. The two acquiring carriers and CRCX are required to make periodic reports on their progress in complying with these Appendix Q requirements.

In addition, the acquiring carriers have made a number of investments, and changes to operating patterns, in the Cleveland, Buffalo, and Chicago terminals. Some of these have come as the result of local pressure or regulatory requirements, and some have been made to address operating problems.

The following sections address Appendix Q issues, as well as actions taken in each of three critical terminal areas.

# A. Appendix Q Issues (Issued and Imposed on NS and CSXT by STB)

#### **CSX Transportation**

The STB required a number of actions by CSXT to mitigate the impacts of increased rail traffic on local communities. These included:

- 1. Signage at grade crossings (completed prior to 12/31/99)
- Certification of compliance with FRA/AAR hazardous materials regulations (certified 5/17/99)
- 3. Liaison with local emergency response organizations, development of local HAZMAT response plans, assignment of toll-free phone numbers (complete)

CSXT was ordered to upgrade protection at a total of 51 grade crossings in Illinois, Indiana, and Ohio. Most of these were completed with the double-tracking of the former B&O line. The remainder are in progress. Specific agreements were executed with a number of towns and cities in these states, involving grade crossing closures, grade separations, crossing improvements, and information systems for emergency management agencies showing train locations. All of these projects are underway; some have been completed and most of the rest should be implemented this year.

CSXT was ordered to make an ongoing effort to mitigate rail noise by increasing the use of welded rail and investigating curve lubrication techniques. These improvement projects will continue into 2000.

Three historical preservation activities were also required of CSXT. These involved:

- A historic district in Exermont, Illinois
- · The former Lake Shore & Michigan Southern shops in Collinwood, Ohio
- 75th Street Tower in Chicago

Historical surveys have been completed, and the projects are underway.

#### **Norfolk Southern**

Due to the increase in traffic projected for certain of NS' lines in Ohio, Illinois, Indiana, New York, Pennsylvania and Virginia, NS was directed to improve grade crossing protections, signage, and maintenance on 23 line segments. These were certified as complete by NS in May 1999. In addition, specific improvements were required at 50 rail/highway crossings. As of December 30, 1999, approximately 40% were complete. Some have been superseded by memoranda of understanding with local jurisdictions.

NS was also mandated to work with localities on mitigation of the impacts of increased rail traffic, especially on emergency services. This work is largely complete; plans for various actions including information systems to provide train locations have been approved by most affected communities, and implementation work is underway.

The Vermillion Connection at Vermillion, OH is complete and in service. The Cloggsville Connection in Cleveland, intended to improve train service and reduced delays and community impacts in the Cleveland metropolitan area, is partially in service and is expected to be in full operation in August 2000.

The relocation of the NS main line in Erie, PA, from the middle of 19th Street to the grade-separated CSXT right-of-way is in the planning process.

Specific steps to be taken to reduce noise in many communities are still under discussion with community leaders. A number of outreach meetings have been conducted.

#### CRCX (Conrail Shared Assets)

CRCX operates in densely populated areas of Michigan, New Jersey, and Pennsylvania. The STB Appendix Q conditions imposed on CRCX improved principally the improvement of grade crossing safety and the strengthening of hazardous materials response plans. These efforts were completed by mid-1999, except for ongoing efforts to reduce rail noise, which should be completed by August 2000.

## **B.** Cleveland Issues

During STB hearings prior to approval of the Conrail purchase, Cleveland had been at the center of concerns over the impact of increased rail traffic. During the hearing, the proposed takeover of Conrail by NS and CSXT, public attention focused on the forecast of greatly increased train volume on the NS line through Lakewood, Ohio (west suburban Cleveland) and on the Cleveland Short Line, which runs through low-income neighborhoods on the south and east sides of Cleveland.

NS agreed to contribute to a community impact fund for the City to use at its discretion to mitigate the impact of NS increases in train volumes. The most important measure proposed by NS was the so-called Cloggsville connection, to expedite train movements between the former Nickel Plate main line and the Cleveland Short Line. The Cloggsville Connection is expected to be completed in August 2000.

Cleveland continues to be an operational problem for CSXT. CSXT has stated that on Day 1, it was found that Cleveland operations could not be executed as planned. The railroad is relying on its ex-CR Stanley Yard in Toledo, and adjacent Walbridge Yard, to do much of the work formerly scheduled in Cleveland.

# C. Buffalo Issues

Buffalo has been an operational trouble spot since before the Conrail split-up. The largest problem is CP (for "control point") Draw, a double-track drawbridge over Buffalo Creek. All CSXT trains on the Chicago Line, some NS trains to and from the Southern Tier Line, and CN trains from Niagara Falls to connections with U.S. railroads, all must use CP Draw.

A second problem is yard capacity. CSXT uses the former CR Frontier Yard. NS received Bison Yard, from which most of the track had been removed by Conrail, which had no need for two projor yards in the Buffalo terminal. NS has recently re-installed ten tracks in Bison Yard. This \$16 million project was planned and executed in three months. NS has also leased the Buffalo & Pittsburgh's Buffalo Creek Yard (adjacent to CP Draw) to provide more yard capacity in the region.

During hearings held by FRA on the operational problems in Buffalo, CSXT and NS committed to capital improvements, including the removal of the bottleneck at CP Draw, but details and timetables have not yet been finalized.

# **D.** Chicago Gateway Issues

The Chicago Gateway is where much of the interchange from former Conrail lines to Western connections occurs. St. Louis, of course, is an interchange point as well, and CSXT also makes interchange with Illinois Central at Effingham, Illinois and with Union Pacific at Altamont, IL. NS has interchanges with the Illinois Central at Tolono and with UP at Salem, IL. However, Chicago remains the largest interchange with Western roads for both CSXT and NS.

Both railroads had terminal facilities in Chicago prior to the Conrail takeover. NS' principal freight yard was Calumet Yard, on the far south side of Chicago. Intermodal traffic was handled at the former Wabash yard in Landers, reached by a route that crossed two other major rail lines at grade. CSXT's Bedford Park intermodal facility is adjacent to the Belt Railway of Chicago Clearing Yard, and is reached by B&O Chicago Terminal (BOCT) trackage that also affords access to BNSF's Congress Park Yard, UP's Proviso, and Soo Line's Bensenville Yard.

Acquisition of Conrail gave both NS and CSXT an opportunity to improve their terminal operations in Chicago. CSXT gained multiple routes into Chicago with its acquisition of Conrail's Fort Wayne Line, and CSXT's acquisition of the Chicago Line afforded an opportunity to construct a new intermodal terminal at 59th Street.

However, both railroads experienced considerable congestion in Chicago following Day 1. In a presentation to the FRA, a senior CSXT manager stated that the railroad had learned that the keys to keeping Chicago fluid were "counterclockwise flow" (using the ex-CR Chicago Line for inbound traffic and the BOCT for outbound) and "at least three routes" (BOCT, CR Chicago Line, CR Ft. Wayne Line) to minimize congestion. It appears at the close of 1999 that CSXT's problems in Chicago are being resolved.

# **IV. Information Technology Issues**

# A. Introduction and Summary

#### **Pre-Split Background**

Despite a number of early IT problems and service related problems, <u>overall safety of both CSXT</u> and NS has improved as compared to the same period a year ago. Since Split-Date FRA's *Conrail Merger Safety Surveillance Team* has diligently monitored and addressed local safety conditions throughout the Conrail acquired territories – from Buffalo, New York, to Harrisburg, Pennsylvania, to Cleveland, Ohio, to Chicago, Illinois. This same level of effort will continue throughout the future and until such time that FRA is assured that safety at the Conrail acquired territories is not compromised.

As part of the review process, FRA's Conrail Merger Safety Surveillance Team inspectors examined in detail the carrier IT acquisition plans and offered specific comments. The comments prepared by FRA field representatives in the Spring of 1999, prior to the Spit-Date, are reproduced below:

"The establishment of an independent entity named Conrail Shared Asset Operation (CRCX), which removes CRCX from the official waybill and routing, could result in information gaps as the integration of changed operations begins. The primary issues are: a) in the areas of joint operations, b) regarding hazardous materials shipping documentation and enrichment text of separate computer records, c) car inspection and equipment repairs, d) responsibility for replacement of missing placards, and e) training in areas of emergency response and local access to the post-split computerized train and car information. The CRCX entity has the potential to become a focus of such problems concerning CSXT, NS and the retained CRCX operations."

The operating areas of CRCX are complex networks. For example, the North Jersey Shared Asset Area consists of 20 yards and 189 route miles of track. The South Jersey Shared Assets Area consists of 16 yards and 240 route miles of track. The Detroit Shared Assets Area consists of 8 yards and 85 route miles of track.

The establishment of a "Terminal CRCX" type corporation ensures privacy of privileged rate information for the two acquiring carriers, CSXT and NS. Both carriers agreed upon a split-up plan that would use gradual integration of CRCX's computers to enable communication with both NS and CSXT. The emphasis on gradual integration may have been a significant contributing factor to the post-split IT problems with respect to HAZMAT documentation.

Training programs for enabling new information management processes had not been extensively outlined in the Operating Plans submitted to the STB. FRA feit that both acquiring carriers should place special emphasis on ensuring that personnel responsible for hazardous materials information received proper training in the documentation necessary for hazmat car movement. The fear was that insufficient training by NS or CSXT within CRCX might result in an increase in non-compliance with the Federal Hazardous Materials Regulations. There was room for ambiguity in responsibility and training of employees within the shared areas, particularly if Conrail employees retained to run this terminal enterprise had only restricted access to waybills and other sources of documentation.

A major issue for the owners of CRCX was the historic practice of pulling cars (even placarded hazmat cars) from industries prior to receipt of bill of lading information. It had been CR practice to pull these cars and p'ace them on "lease tracks" or in industry yards pending receipt of necessary information from shippers.

The immediate pre-split IT concerns of the FRA were:

- Neither CSXT nor NS had provided sufficient information to ensure the maintenance of required hazardous materials information during the implementation;
- Many issues regarding separation of information contained in datasets, such as the customer master data file, station master data file, and revenue historical file, and the confidentiality of information had been resolved by early May 1999;
- c) The access of data for the proper operation of the CRCX had not been simplified and put down on paper;
- d) Finally, if each road was provided access to the data, what checks should be put in place to prevent one road from modifying the data of another road, whether intentionally or not?

Nevertheless, the split-up began on June 1 without complete resolution and full testing of these business and regulatory IT related problems. It is FRA's belief that the primary IT lessons learned from the UP/SP merger were largely not fully exercised by CSXT and NS. Prior to the June 1 split, FRA's merger surveillance team concluded in an independent review that:

"Experience gained during the recent Union Pacific acquisition of the Chicago and Northwestern Railroad and more recently. Southern Pacific Lines indicates that it is nearly impossible to make business decisions working out of two (or multiple in the Conrail case) computer systems for long- and short-term operations. The migration of the two systems into a single system should be carefully planned with sufficient testing to ensure a smooth and effective transition."

Instead, the two acquiring carriers followed the tenets of the original merger/acquisition application, which in part said:

"...the transition to fully integrated service will be achieved through a careful, highly coordinated process designed to assure that quality customer service is continued throughout the transition period. All required technology will be fully tested and in place prior to full integration of customer service functions." On page 296, applicants said that, "...[the] IT consolidation will occur no later than December 31, 1999" <sup>4</sup>

<sup>4.</sup> Operating Plan of the Applicants, June 1997

Norfolk Southern said, "The large end-to-end nature ... along with the already existing heavy use of standardized electronic data interchange ... will allow for a sequential implementation of the new NS systems across Conrail while still operating current Conrail systems on the balance of the property."

NS has pointed out that it performed the following tests:

- 54 Systems Tests of Transportation Car Movement Applications with 3,498 car movement events;
- 68 Tests of Transportation Integration Scenarios, with 489 test cycles;
- 103 Tests of Actual Train and associated car movements, with hazardous information included in the tests

FRA believes that nevertheless, the NS tests were insufficient given the magnitude of annual car records; the sample rate was perhaps less than 3 percent of the total Conrail annual movements, and all of the tests were conducted with controlled data files rather than live files.

FRA's merger surveillance team members have concluded that because each Conrail involved participant in the electronic data interchange (EDI) process developed unique software for translation, and because each interprets industry guidelines differently, these individual interpretations often nullify the uniformity attained by a single set of guidelines.

In the end, as the Split-Date approached, both CSXT and NS are believed to have "assumed away" many of the issues that FRA had raised. NS has stated that "nothing was assumed". NS had established special testing labs and cross functional teams (including business and technology) for testing in Atlanta, Philadelphia and Pittsburgh. However, on Split-Date and immediately after, it was apparent to the FRA field inspectors that systems and business process testing had not identified and eliminated all system and data problems.

#### Post Split PERIOD and Early Events Affecting Safety

FRA inspectors began monitoring the safety and service performance of both CSXT and NS on the June 1 Split-Date. As early as June 3, there were indications of operational difficulties and evidence that Post-Split operations were not going smoothly. The examples below illustrate some of the early warnings picked up by the FRA Surveillance Teams:

- 1-1.1 On June 1, 1999 (Split-Date) "Train movements and yard switching levels were at substantially reduced levels following the Memorial Day Weekend, with minimal safety related incidents reported at Conrail, CSXT or NS during the entire holiday period.
- 1-1.2 CSXT computer systems back on line as scheduled at 7:30 AM on day one with no reported problems. NS computer system was delayed until approximately 5 PM. By using hard copy of waybills, trains were assembled and continued to move with manual documentation of hazardous material shipments.

- 1-1.3 At the Shared Assets' Oak Island Yard, the number of cars to be handled was small. In the morning of day-one there was a minor problem with T-Codes (a process used for car classification and management by Shared Asset people). It appeared by noon that the issues had been resolved.
- 1-1.4 On June 2, a Port Reading, NJ, train moved 18 cars of hazardous material without proper documentation for the Train & Engine crew. In this case, FRA investigators found no Conrail form CT-1580 available to the crew. On the same date, Pavonia yard was also reporting problems with the T-Codes, which govern assignment of car movements to either CSXT or to NS.
- 1-1.5 Detroit Shared Assets Area reports Hazardous Materials car delays because paperwork about the commodity and car movement is not available to yard or to crew.
- 1-1.6 On June 3, E-Rail Terminal in northern New Jersey (Shared Asset Area) reported major problem with lack of advance billing for train crews. The delay affected some US Mail movements. Also that day, Maher Terminal at Port Newark reported problems with EDI (electronic data interchange) data communications to and from the railroads. Problems with just one train (TV-12) persisted between 6AM and 3PM.
- 1-1.7 During the second week of integration, FRA discovered that more than one thousand cars were being manually handled because the T-Code information support system was not providing accurate or timely information.
- 1-1.8 NS has indicated that there were several interrelated causes for the T-code problems experienced following the Split-Date. The basic problem was that inappropriate waybills were associated with some cars. Therefore, classification was incorrect. NS system problems did not allow the proper waybill to be activated. Out-of-sequence reporting in the field did not deactivate waybills at the proper time. Tables in NS and CRCX systems were not in sync, which resulted in data errors, and these errors were not corrected on a timely basis.

From the above-archived FRA records, it is clear that data problems began to occur almost immediately at many locations. There were numerous reported computer "glitches" at both NS and CSXT acquired locations, as well as reported "T-code" IT problems in the CRCX Shared Asset Areas. Reports of information and communication related problems began arriving at the FRA offices by email, phone and letter during the first week of Conrail integration.

Because of information failures, train arrivals and departures were being delayed with the result that:

- 1) crews were left aboard trains well beyond the hours of service limits;
- 2) crews did not receive adequate taxi transport;
- 3) and many crews were called to duty only to find out that the trains they were called to operate would not depart as scheduled.

NS has commented that "there were no NS IT issues related to crew-call problems". NS believes the principal issues involved training and data in the Conrail systems – data which had not been properly updated. FRA finds that data errors are part of any IT system and that such inputs have to be managed by Information Systems people. FRA field inspections also found that certain software

functions of the initial crew-calling software did not always act as intended in selecting crews.

FRA inspectors saw some evidence of poor training for yard crews on the new reporting systems. In addition, the two carriers did not accurately anticipate the day-one traffic volumes to be handled at many locations, and this contributed to start-up problems. (CSXT has stated that "there were no new reporting procedures or documents provided to T&E crews on the Split-Date, and that train crews continue to use former Conrail train documentation").

The plans were to not affect the field operations personnel. What CSXT underestimated was the differences in the two cultures and their ability to meld operating practices. There were dramatic differences in the approach to naming and running trains, in the reporting of valid L/E (load/empty) status on equipment and the importance of timely reporting of train departures.

It was not FRA's intent to cause additional operating difficulties to the two railroads as they struggled to assimilate Conrail. FRA sought to assist in rectifying paperwork problems by contacting shippers and customer service centers rather than taking enforcement action. A total of 20 violations of Federal regulations were written by FRA between June and December. However, as time passed and the problems continued, FRA began in November to take a more aggressive stance.

As of December 1999, FRA had compiled a large number of potential and actual service failures that were directly related to IT problems, including "lost" freight cars and waybill data, and other operating problems. Because of a direct link to hazardous materials transport safety issues, crew fatigue, and other safety related documentation procedures, this IT White Paper was prepared.

In addition to developing this analysis, FRA spent considerable staff and regional field investigative time trying to measure the significance of the issue, identify real safety related consequences in the field, educate railroad workers and managers about the problem and work with them to identify possible solutions. FRA has also tried to keep the STB staff informed about FRA's field findings and IT research through biweekiy and monthly updates.

As part of this effort, FRA sponsored an intensive two-day IT conference at Newark, NJ, to investigate the IT/Hazardous Materials and safety related issues. Participants from all three railroads were specifically invited to attend because of their technical knowledge of the IT and safety issues in the Conrail transaction. The conference took place in the first week of November 1999, and many of the particular problems identified in this paper were discussed at that meeting. Further, while the meeting was underway, one of the most important case examples cited, herein, was slowly evolving unchecked and uncorrected in the field.

Despite some improvement, operating and IT problems continued across both systems (CSXT and NS) seven months after the "Split-Date." These problems included continuing shortages of crews, and more importantly, lost and mishandled cars, "no-bills" (cars moving without waybills), and improper designation of hazardous materials shipments. While some problems were due to lack of training, unanticipated traffic volumes, and operating plans that proved unworkable due to changes in traffic patterns, many were the result of decisions made by NS and CSXT during the planning for the division of Conrail. The manner in which the CRCX "shared assets" organization was created, as a less than fully independent railroad, has in FRA's judgment, contributed to the many difficulties in the proper waybilling, routing, and tracking of loaded car movements.

CSXT and NS differ with FRA in that they have expressed belief that the lack of accurate waybill information has not been an IT issue, but a timeliness and operating procedure issue.

Over its years of independent operation, Conrail had rationalized its track and yard network, particularly in the areas now designated by the new owners as the shared asset terminals of Northern New Jersey, Southern New Jersey, Philadelphia, and Detroit. The creation of these "shared asset areas" accomplished two purposes: two-carrier service could be offered to shippers, and the limited capacity of the rail network could be more effectively utilized by the two owning carriers.

The shared asset areas were to be operated by a successor corporation to Conrail, initially called "Conrail Shared Assets Operation" or "Little Conrail" (now AAR symbol CRCX). CRCX conducts terminal and local freight operations on behalf of its two owners.

On the surface, CRCX has some characteristics similar to terminal railroads elsewhere in America, railroads such as the Belt Railway of Chicago and Terminal Railroad Association of St. Louis. NS believes, however, that Conrail Shared Assets was created to meet different needs than most terminal railroads, although it does share some characteristics of terminal lines. NS has pointed out that, like BRC and other terminal railroads, CRCX does not waybill cars it originates for NS or CSXT. With the exception of intra-terminal traffic, none of these railroads waybill originating cars. Instead, these cars move under switch bills to the line haul carrier, which is responsible for waybilling. Also, NS contends that these terminal railroads do not appear on the bill as a participating carrier. However, in most cases, the terminal railroads are paid a per car switch charge and maintain their own switching tariffs. They thus appear as a switch carrier on the waybill.

Because CRCX compensation is contractual rather than a published tariff, NS has stated that listing CRCX on the waybills is not necessary for collection purposes. NS also believes that the only difference between a "soft" interchange to or from CRCX and a normal interchange such as to and from BRC is that a soft interchange does not result in a report to the AAR, and that car hire remains in the account of the linehaul railroad.

FRA has concluded that the fundamental IT problem was a deviation from routine EDI standards and practices in data interchange between CRCX and its owners. The new process often created a misinterpretation of data being shared between CRCX computers and the computers of its owners. This in turn often resulted in the need to manually generate waybills, train lists, and other data. <u>These non-standard new processes</u> for controlling and identifying cars formerly handled as an interchange or "car in the route" were not properly tested and operationally perfected prior to splitday. In contrast, the procedures for controlling interline movement on other terminal lines cited as examples have long been in place. In the new procedure, CRCX receives standard EDI 417 waybill information from both owning roads. These waybill documents should contain sufficient transportation movement data with all related regulated hazardous endorsements.

**Conrail's absence from the waybill has important implications** as train crews and yard managers try to smoothly and correctly identify and track car movements. **The implications of removing CRCX from the waybill as an interchange railroad were underestimated by CSXT and NS. One of the major related issues that occurred on Split Day was CSXT's and NS' inability to get proper paper work from short lines and interchange carriers.** In the end, CRCX is no longer considered as an interchange railroad, and the resulting so-called "soft interchange" process of exchanging traffic to and from its new owners has not worked entirely as expected by NS and CSXT.

For most of the railroad industry's history in North America, the process of shipping on a railroad has been straightforward, both in information enrichment of each railroad's computer databases and in the physical exchange of the car and any paper work required by train crews.

The following steps are part of the normal interchange.

- Shippers contact the railroad to request a specific type of car on a certain date.
- When a car is loaded, the shipper releases the car to the railroad with a FAX, phone call, or
  electronic message. Shippers may generate a bill of lading message either by FAX or EDI. The
  bill of lading may or may not contain tariff or contract rate information, and such information is
  not required for transportation purposes. Railroads require shippers to list on their documents all
  commodity information including hazardous documentation as applicable.
- Upon receipt of the car release message, the railroad issues a work order to the crew assigned to serve that shipper and sends a local train to retrieve ("pull") the freight car from the shipper's loading dock.
- In the absence of a bill of lading or other documents, passed to it electronically or otherwise by either CSXT or NS, CRCX crews cannot move a car (especially a HAZMAT car) without finding a substitute means of getting such information from the shipper.

Complications sometimes occur in the documentation of these release notices and work orders. CRCX has developed an "industrial document" in its TRIMS system that contains sufficient information to meet FRA requirements. The existence of different documents, plus "timing" differences in the receipt of messages, are at the heart of the post-split information technology problems.

For example, a car is pulled before paperwork is complete. These cars are known as "no bills" or "hold" cars. Since CRCX local crews and yardmasters have little or no information regarding destination, commodity, or rate when they pick up the car, such cars are then usually placed in a "hold" status in the first CRCX serving yard. The hold allows the required paperwork to catch-up. In today's world, the paperwork is often in the form of electronic messages or computer system to computer system data enrichment.

CRCX does not create waybills. The information necessary to create a waybill is provided directly by the shipper to the appropriate parent railroad, either CSXT or NS. The parent railroad, either CSXT or NS, then creates the waybill in their central computer system. CRCX does receive some of the waybill data, specifically destination and routing, that is necessary for the proper movement of cars. This partial waybill information is transmitted to CRCX through the former Conrail car management system known as TRIMS.

NS points out that it and CSXT send EDI 417 waybill data to CRCX. This form 417 data contains customer, commodity, and routing information, including HAZMAT information. While FRA agrees that this is correct, FRA finds that the information may not reach CRCX until after the customer has already released the car to a passing CRCX train crew. The car, in this case is moving faster than the electronic documentation which CSXT or NS receives.

Since the Split-Date CRCX employees have experienced difficulty in obtaining the parts of the waybill data that they must have in order to manage operations, specifically hazardous materials data and information on the destination of each car. Furthermore, when CRCX picks up a car from a shipper with incomplete shipping data, the parent railroad is suppose to "enrich" the necessary shipping data in the CRCX TRIMS system by supplying additional shipping information once it is received from the shipper. However, the CSXT and NS computer systems have not always been supplying the data needed to enrich the CRCX TRIMS system. In addition, the mainframe computer systems on both CSXT and NS have been failing to correctly record information on car movements originating in CRCX territory. Some of the most common types of pertinent waybill information that are not being properly conveyed to CRCX include:

- Type of commodity and whether it is hazardous
- Car destination
- Standing order of inbound consists arriving CRCX yards

NS has stated that the probable reason for this missing information was that, due to systems and training problems, CRCX personnel could not automatically generate a waybill, and therefore often created a manual "nine-line waybill" in its place **as a manual intervention to govern the car movement**. When this manual process is done, then neither NS' nor CSXT's system can create a waybill. It is such conditions that quickly became evident to FRA field inspectors in June 1999.

Unlike conventional switching and terminal railroads, CRCX does not make "official" (AARreported) interchanges with its owners, CSXT and NS. Under formal interchange procedures, the switching or terminal railroad would not release a car for shipment to a connecting railroad if the proper waybill information was not available. In the case of CRCX, with no formal interchange process, cars are being released to its parent companies, CSXT and NS, even when sufficient waybill information is unavailable. The unique structure of the CRCX operation, coupled with the IT problems has the resulted in a significant deterioration in switching performance when compared to the relatively error free switching operations that had existed on the former Conrail system <sup>5</sup>.

**The absence of hazardous materials information is a violation of FRA Safety Regulations**<sup>6</sup>. The absence of enriched car information also complicates CRCX movements of numerous non-hazardous cars. Essentially, increased numbers of cars are moving as "no bills" in the shared areas.

FRA believes that the fact that CRCX 1) does not waybill the cars it originates for the two owning railroads, and 2) is not identified in the waybills as a participating railroad for the loaded cars it delivers to shipper sidings, is the source of many of the IT related problems that could have been avoided.

# **B.** FRA Surveillance Efforts -- Findings

The case studies in the next section of this paper (section IV. C, page 49) were reviewed at a SIP/Safety meeting with all three carriers (CRCX, CSXT, NS) during the third week of December. The focus of that discussion involved events surrounding the loss of GATX car 16445. Both NS and CSXT acknowledged, in the December SIP reviews, the chronology of events and the basic facts.

As the Conrail integration moved into January 2000, both railroads continued to review the events to determine "why the available information systems and AEI (radio frequency automatic equipment identification) readers did not alert management" so that timely corrective action could be taken before the car began leaking.

The 1999 IT problems described in this review continued until year-end. In a series of inspection visits extending from early December into January 2000, FRA inspectors found a number of examples of the continuing problems in Sharon Yard, Sharonville, Ohio. On January 6, 2000, this yard was filled with cars. The yard had over 50 NO-BILL cars from the previous month. Reason: the local yardmaster and clerk could not obtain from the recently installed TYES system the information needed to move cars. Atlanta personnel informed the Sharon clerk that only a "supervisor" was allowed to change the information in the computer. The new TYES system had been operational at Sharonville for four weeks. However, there was only one computer access point for both the yardmaster and the trainmaster to use. Only yardmasters and trainmasters had been trained to use, and will use, the new system. However, during the New Year holidays, most of the trained people were on vacation and the personnel left to run the yard had no training.

NS believes that the Sharonville incident resulted from cars being pulled from customers' sidings prior to origination of a bill of lading by the customer, or from cars reaching NS from an interchange without proper documentation. Without a document from the customer or from the forwarding road,

5 Conrail hazardous materials billing accuracy pre-split was approximately 99.6 percent. Random field inspections suggest a November 1999 rate of approximately 97percent.

TYES would not contain the required movement documentation for alerting train crews. NS has stated that extensive training was provided to the Sharonville workforce beginning one full week before TYES cutover. Additional trainers were on site during the first two weeks of Januar 2000. The training included CBT classes and one-on-one training sessions. Since training was conducted, FRA believes that the problems revealed by field inspections during December 1999 resulted primarily from IT problems rather than from unfamiliarity with the new TYES system.

The NS IT problems continued beyond Sharon Yard. FRA inspections late in December at Gest Street Yard in Cincinnati, Ohio, confirmed that Gest Street also had IT System related problems. On January 7, Gest Yard was not fluid. According to dispatchers located at Ft. Wayne, Indiana, and Dearborn Michigan, NS was running trains out of Ft. Wayne and Columbus, without first checking with each other or Cincinnati to determine if these trains could be handled. On the same Friday, there were 18 trains north of Cincinnati being held out due to congestion. There were also a large number of trains held to the south of Cincinnati. The reason in the log book is "due to congestion." NS notes that it does not control movements through Cincinnati (they are controlled by CSXT). However, in FRA's judgment the root cause of the yard congestion appears to have been a lack of access to reliable and timely freight car movement data.

# Examples of Early Field Reports from FRA Region I Field Inspections in the period June 1<sup>st</sup> through November 1999

FRA Region, SIP Team members conducted surveillance and inspection activity at CRCX, CSXT, and NS terminals and trains in the North Jersey area, Buffalo, New York area, Detroit, and the Albany (Selkirk Yard) area. Across the region, in all three operations, inspectors grew concerned about non-compliance to 49 CFR 174.26 (a) and (b) (Notice to train crews of placarded cars). The most serious problems were:

- No HAZMAT documentation in possession of the train crews concerning the HAZMAT shipment description
- Incorrect HAZMAT documentation in possession of the train crews concerning the HAZMAT shipment position in train
- No information shown on wheel report or other crew documents to indicate HAZMAT cars were in train

NS states that it distributed an NS Inquiry Manual and guide book to the Shared Assets employees in August 1999. That manual or guide book allowed Conrail people to gain access to NS mainframe systems so that they could retrieve important car movement data. However, FRA field inspectors could not find these manuals during their inspections and most Conrail people on duty did not have proper training or working passwords to acquire access to the NS mainframe until well into November 1999.

FRA reports identified that hazardous materials information in possession of the CRCX, CSXT, and NS train crews was often inaccurate. These FRA field reports and related communications

are on file at FRA Headquarters in Washington, D.C. The HAZMAT basic description documentation and additional information required for HAZMAT shipments were incomplete and/or out of sequence. All three railroads occasionally used shipper bills of lading or handwritten records to satisfy the HAZMAT documentation requirements. The new post-split computer information systems were not equipped with compatible programs. Local managers and clerical staff did not have the knowledge to access individual carrier computer systems that would allow each carrier to access the other's rail car information.

These problems and field inspector findings were then discussed in detail at the regularly schedulea Safety Integration Plan (SIP) meetings.

#### Intensive Review, August 10 - 14:

FRA's SIP Hazardous materials Team Inspectors conducted surveillance, interviews, and regular safety inspections in the North Jersey Shared Asset area on the property of all three carriers. The inspectors found no uniformity between carriers or quality control programs in place that would allow consistent effective rail operations between acquisition carriers. Individual carriers were isolated from each other's operations and rail car information systems.

FRA field inspectors found that HAZMAT documentation was generated independently by each carrier without the ability to share information efficiently. Each carrier accessed HAZMAT information by telephone and fax with their respective customer service centers and then generated hand written HAZMAT documents and bills of lading to satisfy 49 CFR 174.26(a) and (b). These HAZMAT documents were passed from inbound train crews to outbound train crews.

#### Intensive Field Review, September 13 - 20:

HAZMAT SIP Team Inspectors continued HAZMAT inspections on the three integrating railways on a region-wide basis. The program consisted of inspection at facilities near Newark, New Jersey, Selkirk, New York, Buffalo, NY and Binghamton, NY. **Evidence showed** "continued non-compliance" with HAZMAT documentation requirements. FRA HAZMAT inspectors submitted recommendations for civil penalties for non-compliance. Non-compliance means that the railroad or the crew or the yard management is not following proper procedures as spelled out in the CFR Regulations.

#### Continued Review, October 1-17:

All Region HAZMAT inspectors conducted inspection activity. No inspections of regional shippers or other facilities were conducted. Non-compliance with HAZMAT documentation continued to be found.

#### October 18 - 22:

Inspectors conducted round-the-clock team inspections of the CRCX Port Newark, New Jersey terminal with special attention given to NS train TV-11, and CSXT train TV-307. This location and these specific outbound trains were of particular concern to local la' or organizations. This

inspection disclosed 12 defects including HAZMAT documentation in outbound trains NS TV-1<sup>1</sup> and CSXT TV-307. All defective conditions were corrected prior to train departures.

This Port Newark inspection confirmed continued system non-compliance with 49 CFR 174.26(a) and (b). Local rail employees were unable to produce accurate HAZMAT documentation from their local computer rail car information terminals.

Based on these reviews, FRA decided to focus upon HAZMAT problems by inspecting primarily inbound trains. Further, a special team was established to document the IT problems.

## C. Safety Related IT Case Studies

The following section of this paper will highlight the effects of information system problems on service quality and safety at CRCX, NS, and CSXT. While overall hazardous materials documentation has improved by years' end, occasional problems continued to arise. The problems continued in spite of actions taken by the two owners to discover the root causes of poor data enhancements and create permanent solutions.

Several case studies are offered to illustrate the continuing hazardous materials related problems. As late as November 9, 1999, a hazardous material incident occurred in western Pennsylvania that involved a failure of all three railroad information systems. These events illustrate the problems caused by poor and missing information.

Finally, conclusions and recommendations as to possible solutions to these IT and hazardous materials safety related problems are provided.

#### **General Safety and IT - Hazardous Material Case Studies**

Before examining the specific cases of IT related failures, it is important to establish a baseline against which improvement or degradation of a managed process is to be judged.

The FRA has a history of working with all of the railroads on the safe movement and documentation of hazardous materials. Moreover, it is FRA's judgment that the railroad with the most improvement in its IT/hazardous materials related data quality over the last decade has been Conrail. Once with an error rate of about 10 percent in the early 1990's, Conrail management had worked out a root cause process that reduced its error rate on documentation to less than a half of one %. Figure 6 on page 50, Conrail Errors on Hazardous Materials, shows the progression of that error rate in the last two years from a 3.7 % level in the summer of 1997 to just 0.37 % in the months before the Conrail Split.

Recent field studies of trains passing in and out of the Shared Assets Areas indicate that an FRA inspector could find a typical error rate of about 3 % in the train consist. This indicates a clear safety documentation result from the Conrail integration during the first six months. This issue of poor Conrail Shared Asset documentation can only be corrected by a unified action of the three involved carriers. The proposed action will be discussed in the coming pages.





#### **Case Study 1: Hazardous Materials Incident**

A November 9, 1999<sup>7</sup> leak in Pennsylvania involving a New Jersey originated tank car is the most recent evidence that IT is at the root of continuing freight car management problems. This private tank car<sup>8</sup> contained corrosive materials, subject to inspection every 48 hours, and was in a "mis-routed and no-bill status" for a period of about forty days.

The odyssev of this car began with a faxed shipper bill of lading, sent to CRCX on September 28. The fax was the shipper's official release of the tank car to Conrail Shared Assets control. The fax was used by Conrail to issue a work order to a local train crew. That crew picked up the car at origin station Paulsboro, NJ, and moved that one car together with others to the main CRCX yard in Camden, NJ<sup>9</sup>. The fax stated that the car was to be delivered to a station in Houston, and that the routing was a Paulsboro Origin CSXT. Table 2 on page 53 is a summary of events and Table 3 on page 54 shows specific subsequent AAR location reports for this car.

Conrail management manually entered a record into its TRIMS database that the car was a hazardous materials "no-bill" with instructions not to move beyond Camden until instructions were received as a computer message from either CSXT or NS. The shipper separately sent a message to CSXT computers, with the complete route identified as a waybill. CSXT computers were then supposed to automatically send an enrichment message to the Conrail TRIMS system, to provide Conrail with information needed to release the car from Pavonia Yard for onward movement. An enriched TRIMS message should have shown this car routing as:

CRCX - Pavonia - CSXT - Effingham - etc., with delivery in Houston.

7 November 12, 1999 Conrail documentation researched by FRA

8 GATX 16445

9 This move is about 11 miles over several highway crossings, with Pavonia Yard as the destination. 50

There is no evidence in the FRA investigation that such a message was sent or received by Conrail TRIMS. The car remained at Pavonia Yard in its no bill status.

On October 1, electronic records show that a train carrying this hazardous materials car entered the NS network near Control Point ROCK on a train bound towards Abrams Yard near King of Prussia, Pennsylvania (suburban Philadelphia). Subsequently, that car moved to NS locations at Allentown, PA; Harrisburg, PA; and suburban Pittsburgh, PA, (Conway Yard).

In the meantime, CSXT computers recorded a "phantom" September 30 CSXT interchange of this car some 900 miles to the west of Paulsboro, NJ, to the Illinois Central at Effingham, IL.

Actually, NS maintained physical possession of the car, and at no time is there physical evidence, such as an AEI scanner reading, that CSXT ever controlled this car.

The car leak occurred in Conway Yard, NS' large classification yard, at 7 PM on November 9. Thirty railroad employees were evacuated. Twelve employees were taken to local hospitals for medical examination, and then released. The separate railroad company and FRA investigations of the cause of the leak are still under review. The car had, as of November 9, been about 40 days *en route*. The car contained a derivative of Sodium Hydroxide Solution (a Class 8 corrosive). The probable cause in the first FRA generated news bulletin was listed as "the failure of the interior heater coils". However, the root cause was that the car was not under informed management control, as proper documentation was absent. FRA believes that this case study illustrates the heart of the IT issue. Information was available about this car and its corrosive contents, but that information was not being shared with the proper information databases that must unite each carrier to route cars properly.

This example of missing information suggests two possible fixes to return the post-split Conrail to a high quality reporting level and avoid these reoccurring hazardous materials problems. One possible IT "fix" is to simply add CRCX back into the official route and pass the waybill information confidentially to Conrail. A second possible fix is to write "exception reporting" software code into all three data systems, so that hazardous materials cars are all flagged within 8 hours of receiving a shipper release. The flagged systems would then have to be manually or computer list compared so that no car can move if it is captured in either an NS or a CSXT system, but not in the CRCX system. Under this fail-safe checking, records for possible misbilled cars would have to be shared with a special three-company management team. There may be other ways to resolve this continuing problem which the FRA could discuss with the carriers. The bottom line is that the existing procedures are not working and must be improved.

NS believes that adding CRCX to the waybill route would create huge programming changes on all three railroads. They believe it is unnecessary since each railroad has a unique station accounting code for its shipper traffic. NS agrees that it and CRCX could produce HAZMAT exception reports. Further, NS points out recent changes late in 1999 and early in 2000 that it and CRCX have made to their joint data communication and traffic definition functions.

In response, FRA advised that it may have been simpler to maintain the old Conrail interline IT functionality than to change to all three IT systems to accommodate this new car management process. FRA finds that the modified Conrail TRIMS system (TRIMS 3) appears to work well and could have provided the critical information and document flows on day-one if CSXT and NS had agreed to that process during implementation planning. Efforts to install a new process and make changes to three systems have proved most difficult and have resulted in cars and trains moving without proper documents for emergency response in the event of accidents.

The notes on page 55, Table 4 indicate the basic activities that can either enable proper documentation or lead to a possible violation when a loaded car originates in one of the CRCX Shared Asset facilities. The notes on page 55, Table 5 suggest the types of procedures and checks involved in either an inbound car to be terminated, or an inbound car to be handled through the CRCX area as a "bridge" move.

NS believes that the incident has no relationship to information technology<sup>10</sup>, but is continuing to review events and data. It does seem clear that retention of the Conrail "hard-interchange" with 417 and 418 data enrichment messages to and from Conrail, would have prevented this failure and could prevent repeat incidents with minor impact on costs and manual intervention procedures.

NS also believes that missing data fields should be channeled through the SAA NCSC (National Customer Service Center). While this may be the design procedure, field inspectors found that the process does not always work, long after implementation date.

<sup>10</sup> The railroad prefers to classify the chain of no-bill car movements as "human failure" rather than IT systems problems. Without a clear definition from NS of "human failures", FRA prefers to categorize these problems as IT-related.

Tat le 2. Tracking Events Resulting in Conway HAZMAT Incident As an Information Technology Root Cause					
EVENTS					
Date	Conrail Shared 'sset	CSXT	NS		
28-Sep	Receives bill of lading via fax from shipper – Valero Marketing & Refining, Paulsboro, NJ	Receives Bill of Lading via FAX from shipper, destination Houston. Routed on CSXT from CRCX	7		
28 Sep	CR local train arrives at Shipper: 1) Receives switch list 4) Move 12 cars 5) 11 cars NS 6) 1 car unassigned to carrier	Issues Waybill #809676 At 09:36, for CSXT assigned tank car GATX 16445			
29-Sep	Local WPCA-11 departs Paulsboro with GATX 16445 for Camden NJ at 12:25. Bill of Lading or the Switch List still governs the movement				
29-Sep	Car GATX 16445 arrives Camden at 17:20				
30-Sep	Conrail TRIMS System classified GATX 16445 as "HAZMAT no-bill"	CSXT Computer System reports GATX 16445 "delivered to IC interchange" at Effingham, IL			
1-Oct	GATX 16445 departs Camden NJ on CAAL-1 for Allentown, as "HAZMAT no-bill"		GATX 16445 recorded as "soft interchange" to NS at CP Rock. Train symbol changes to 49G		
2-Oct			49G arrives at Allento wn; classified by NS as no-bill		
11-Oct			GATX 16445 departs Allentown on NS 11K		
12-Oct			GATX 16445 arr. Conway Yard on 11K; identified as no-bill		
9-Nov	1.		GATX 16445 HAZMAT leak at NS Conway Yard		

# Table 3.INQUIRY REPLIES FROM AAR BY CSXT IN December 99 as follow-up to FRA IT Report GATX 16445 Q17

	Date of Event	Location Town
RPT'ARIL ON CSXT	E AT 99/12/14 18	AT WILLARD OH
RPT'DFLC ON CSXT	EAT 99/12/14 03	AT NEW CASTLE PA
RPT'DFLC ON CSXT	EAT 99/12/13 13	AT GLENWOOD PA
RPT'ARIL ON CSXT	EAT 99/12/09 17	AT GLENWOOD PA
RPT'DFLC ON CSXT	EAT 99/12/09 16	AT PITTSBURGH PA
RPT'ICHR FR NS TO CSXT	E AT 99/12/09 08	-X -PITTSBURG ISLAND PA
RPT'ICHD FR NS TO CSXT	EAT 99/12/08 15	-X -PITTSBURG ISLAND PA
RPT'ARIL ON NS	EAT 99/12/08 15	AT PITTS ISLAND AVE PA
RPT'DFLC ON NS	EAT 99/12/08 12	AT CONWAY PA
RPT'ARIL ON NS	EAT 99/11/22 04	AT CONWAY PA
RPT'ARIL ON NS	EAT 99/11/22 04	AT ECONOMY PA
RPT'DFLC ON NS	EAT 99/11/22 04	AT CONWAY PA
RPT'BOHR ON NS	E AT 99/11/10 05	AT-CONWAY PA
RPT'BOHR ON NS	LAT 99/11/10 05	AT-CONWAY PA
RPT'BOHR ON NS	LAT 99/11/10 05	AT-CONWAY PA
RPT'RLOD ON NS	LAT 99/11/0/6 16	AT CONWAY PA
RPT'ARIL ON NS	LAT 99/10/12 10	AT CONWAY PA
RPT'DFLC ON NS	LAT 99/10/12 04	AT ALTOONA PA
RP "ARIL ON NS	LAT 99/10/12 04	AT ALTOONA PA
RPT'DFLC ON NS	LAT 99/10/12 00	AT HARRISBURG PA
RPT'ARIL ON NS	LAT 99/10/11 23	AT HARRISBURG PA
RPT'DFLC ON NS	LAT 99/10/11 21	AT HERSHEY PA
RPT'ARIL ON NS	LAT 99/10/11 20	AT HERSHEY PA
RPT'DFLC ON NS	LAT 99/10/11 12	AT ALLENTOWN PA
RPT'ARIL ON NS	LAT 99/10/02 13	-X - ALLENTOWN PA
RPT'DFLC ON NS	LAT 99/10/01 17	-X-PAVONIA NJ
RPT'ICHD FR CSXT TO IC	LAT 99/09/30 06	-I-EFFINGHAM IL
RPT'ARIL ON CSXT	LAT 99/09/29 16	AT PAVONIA NJ
RPT'DFLC ON CSXT	LAT 99/09/29 10	AT PAULSBORO NJ
RPT'RLOD ON CSXT	LAT 93/09/29 09	AT PAULSBORO NJ
RPT'RLOD ON CSXT	L AT 99/09/29 08	AT PAULSBORO NJ
RPT'PACT ON CSXT	E AT 99/09/19 19	-X-PAULSBORO NJ
RPT'PACT ON CSXT	E AT 99/09/18 09	AT PAULSBORO NJ
RPT'ARRI ON CSXT	E AT 99/09/18 08	AT PAULSBORO NJ
RPT'DFLC ON CSXT	E AT 99/09/18 05	AT PAVONIA NJ
RPT'ARIL ON CSXT	E AT 99/09/16 16	AT PAVONIA NJ
RPT DFLC ON CSXT	EAT 99/09/15 19	AT NORTH BERGEN NJ
RPT'ARIL ON CSXT	E AT 99/09/15 15	AT NORTH BERGEN NJ
RPT'DFLC ON CSXT	EAT 99/09/1: 13	AT SELKIRK YARD NY
RPT'ARIL ON CSXT	EAT 99/09/14 07	AT SELKIRK YARD NY
RPT'DFLC ON CSXT	EAT 99/09/13 23	AT BUFFALO NY
RPT'DFLC ON CSXT	EAT 99/09/13 15	AT CRESTLINE OH

# Table 4 **CONRAIL SHARED ASSET CAR ORIGINATION** The Process (Activities) Outline

- Customer car release and local rail operations pickup
  - Double phone contacts
    - For car release
    - For billing and waybill creation
    - Only one phone call or FAX is directly with CRCX shared asset managers
- Conrail Local Train picks up car
  - Train crew institutional memory may be the only hazardous materials identification
- Train moves without proper hazardous materials documentation to the serving yard
- Local CRCX vardmaster enters or obtains missing car ID records
- Only possible if given sufficient training on all three computer systems
- And only if password and log in names are current
- Car moves to another CRCX yard or is prepared for outbound NS or CSXT train originating movement
- Yardmasters and trainmas. still require correct hazardous materials documentation

# Table 5

# **CONRAIL SHARED ASSET HAZARDOUS MATERIALS CAR TERMINATION OR POSSIBLE THROUGH MOVEMENT OF CARS** BETWEEN CSXT AND NS OR A THROUGH MOVEMENT FROM NS TO NS AND FROM CSXT TO CSXT<sup>11</sup>

- Inbound train received
- Yardmaster may or may not obtain message with advance consist report
  - If not, yardmaster may be able to check against AEI Yard Approach Scanner Reports, if any
- Check against any onboard crew documentation
- Probe against CR TRIMS Reports
  - If still in doubt, use NS or CSXT systems terminals, if available

<sup>11</sup> Example of CSXT to CSXT would be Baltimore, MD to Albany, NY via Oak Island YD; example of NS to NS would be Newark, DE to Buffalo, NY via Oak Island YD.

#### Case Study 2:

A routine inspection was conducted on September 1, 1999 of Norfolk Southern (NS) inbound train, PICA. This train was running from the Pittsburgh yard at Conway to the shared asset yard of Pavonia located in Camden, New Jersey. During the inspection of crew documents, two placarded tank cars located in this train were not in compliance with hazardous materials safety regulations.

The two tank cars, MTCX 803 and MTCX 9004, were located in the number 40 and 41 train positions, respectively. The crew documents did not describe the cars as containing hazardous materials.

NS believes as the acquisition enters year 2000 that these errors have been corrected. However, FRA finds that the errors continue to occur. Further, FRA notes that the presence of hazmat notation on the crew's consist list (as stated by NS in this case) is insufficient; proper documention, a form CT-168, must be in the possession of the train crew. The absence of an accurate form and train line up with correct car positioning is a violation of safety regulations.

During its investigation, FRA made a request to the NS Way Billing Center in Atlanta, Georgia, for the car movement history on these two tank cars. The movement history confirmed that both tank cars were "moving" on train PICA.

According to the Atlanta Center, toth tank cars were described as transporting hazardous materials. However, none of the four crews moving the train between Pittsburgh and Camden had correct documentation.

#### **Case Study 3:**

An example of IT based train consist information is shown for September 24, 1999 at Buffalo. Table 6, page 58, illustrates the specific details about the inaccurate train and car location information in possession of the crew and presumably used to inform the next yard (Cleveland) about the advance train description. Hazardous materials cars are incorrectly located on the TYES generated origin report.

The AEI radio frequency scanner record, while designed for 99.998 percent accuracy, is often not available to the train crew, as with this case study. The local yard-produced record also miscounted the train length at 88 cars and locomotives instead of the actual 99 total units.

#### **Case Study 4:**

During a routine inspection on November 3, 1999 at the NS Abrams Yard (King of Prussia, PA), an FRA inspector detected a placarded tank car located in the 88th position in NS train PIPG. The train crew had no hazardous materials information about the 88th car, tank car GATX 46348.

The Inspector attempted to retrieve a correct document from the NS Way Billing Center in Atlanta. The NS Center did not have a hazardous materials waybill for this car. The documentation in the NS Center did not describe this tank car as containing a hazardous materials.

The Inspector next contacted the shipper in Paterson, New Jersey, for a hazardous materials bill of lading. The bill of lading correctly described the tank car as containing a hazardous materials. This bill of lading was immediately sent to Atlanta for corrective action on this tank car.

On November 4, 1999, a corrected NS waybill was furnished and the placarded tank car was then moved to its destination.

The documents in possession of the NS train crew originated at NS's Conway Yard location near Pittsburgh, Pennsylvania. This train was re-crewed on three separate occasions and at each location no updated documents were offered to the train crew.

#### Case Study 5:

During a routine inspection on November 4, 1999 of NS train PIPG (Pittsburgh to Philadelphia) at Abrams Yard, it was discovered that a hazardous materials car had been moving since October 19<sup>th</sup> without proper identification. The car route was to have been Paterson, NJ, (a CRCX shared asset origin) to Reybold, DE (an NS station). Documentation for this car was obtained when the inspector contacted the NS Atlanta Center.

#### D. The IT Transition Process Used By Conrail Owners

Both NS and CSXT agreed as the controlling owners of Conrail upon a process to migrate a variety of the former Conrail IT systems into the post-split operating environment of CRCX. A few Conrail systems were "flash-cut" on split day. Until Day 1, the Conrail revenue programs and supporting data base continued to feed the other car movement and train planning programs used by local field people and train crews.

NS did begin testing for its planned rollout of TYES before Split-Date. The rollout schedule was accelerated in order to complete before year-end 1999. In fact, the TYES rollout was completed in early December.

Certain business processes were, by design, scheduled for a segmented replacement and shut down. However, on Day 1, the schedule for the shut down and training for many new systems was not in place. The critical systems that continue to operate on CRCX and in locations now controlled by NS and CSXT are identified in Table 7, page 59. FRA believes that the events described here, and the resulting problems, underscore the need for better planning of IT modifications in any subsequent acquisitions or mergers.

Train N Date: S Location: B	NS 47G Sept 24, 1999 Buffalo, NY				
Train Position	Consist Report from AEI Scanner	Train Position	Consist Report from NS TYES System		
1	NS 8202	1	NS 8202		
2	NS 4113	2	UNPX 121436		
3	NS 6519	3	GMRC 24179		
4	HLCX 6225	4	NAHX 93784		
5	HLCX 6219	5	DLRX 1554		
6	NS 2551	6	DRLX 1592		
7	NS 6748	7	NAHX 60102		
18	GMRC 24179	18	NAHX 57980		
19	NAHX 93784	19	CP 317197		
33	NAHX 57980	33	PTLX 41365		
34	CP 317197	34	ACFX 56261		
49	ACFX 56261	49	CN 418312		
50	GMRC 24188	50	CPAA 211244		
60	YKR 6017	60	CNA 549397		
61	NATX 50978	61	MBLX 34233 HAZMAT		
62	YKR 6006	62	MBLX 40138 HAZMAT		
69	HS 61248	69	MBLX 34276 HAZMAT		
70	MBLX 34233 HAZMAT	70	MBLX 34279 HAZMAT		
71	MBLX 40138 HAZMAT (manual)	71	CR 587422		
72	MBLX 34838 HAZMAT	72	CR 490815		
79	MBLX 34276 HAZMAT	79	GVSR 700103		
80	CR 587422	80	DRGW 61483		
88	GVSR 700103	88	FURX 850760		
89	DRGW 61483	(end of train)			
90	CR 73198		New York Company		
99	CR 215403	(end of train)			

	Table 6	
<b>Inconsistent Data in</b>	<b>Sample Train</b>	<b>Consist Report</b>

# Table 7 Change-Over of Conrail's Computer Management Systems

SYSTEMS CONTINUED WELL PAST SPLIT-DATE

Yard Inventory Hump Lists Yard Moves Car and Load Identification

Train Dispatching Train Symbols HAZARDOUS MATERIALS Documentation

#### **Train Consists**

Train make-up Departure reporting Advance Train Consist Lists Train arrival reporting and advance train list reports

#### **Industrial Work**

Local industry pick-up and delivery work orders Original Prime Source for Car Lists Bill of Lading<sup>12</sup> Crew Work Orders Demurrage tracking

#### **Crew Calling**

Management of crew pools Identification of Properly Qualified People

#### SYSTEMS SHUT DOWN ON SPLIT-DATE

Car Classification Local, NS, CSXT, Other Train Blocks Train Symbols Customer Routing of Cars

1) Operating Plan Management Train Schedules Blocking

2) Interchange Reporting AAR & other reporting

#### 3) Electronic Customer Contact

Waybill information Car Location Message tracing Hazardous Documentation

#### 4) Revenue Processing &

Records Many of Conrail Retained Systems in Transition

<sup>12</sup> Field inspections reveal that CRCX management does attempt to inform the local crews and yardmasters of the existence of hazardous materials cars that are discovered to be moving without proper documentation. CRCX generates a 5 AM report each day of cars with a consignee field named as "needhazwb". This is a form of using institutional knowledge about previous custom shipping patterns to alert rail crews in the absence of a controlled electronic based messaging between the new "owner systems" and the legacy Conrail systems.

Many of the processes shown on the right-hand side of Table 7 are now performed by NS and CSXT computer systems. These systems must then link to the retained Conrail processes shown on the left-hand side of Table 7. To date, CSXT and NS have been unsuccessful in integrating the data management functions of the discontinued Conrail computer management system (Table 7, right-hand column) into current CRCX computer management systems that were carried over from Conrail (Table 7, left-hand column). As long as the integration of data has less than 100 % accuracy and completeness, the chance for no-bills and other safety related IT problems exist.

Figures 7 and 8 (pages 61 -- 62) are simplified "before and after" representations of how data was and is now transmitted to the CRCX TRIMS system. On page 61, figure 7 shows how all transportation movements were directly linked to the waybill in the May 1999 pre-split situation. On pg. 62, figure 8 shows how, absent reliable information transfer from CSXT and NS, the CRCX managers are now dependent on fax bill of lading messages as a backup process.

As a result of this approach to systems integration, the pre-existing 99.7 % accurate Conrail hazardous materialss management control process began to fail immediately following the June 1 integration. As the examples in this paper show, seven months into the acquisition FRA inspectors are still finding serious documentation problems. The errors continue despite more than 700 IT projects undertaken by all three railroads prior to Split-Date, and the continued use post split of CSXT and NS established "SWAT Teams" to attack identified IT related problems since June, as well as numerous meetings between FRA and the three railroads.





# E. Railroad Corrective Action with Post -Split IT Rollouts

### **CSXT Rollouts**

- CSXT tested over 70 scenarios and 2000 conditions. Of these, one scenario was dedicated to strictly testing hazardous materials. There were also 10 hazardous materials conditions that were repeatedly tested for each of the 70 scenarios. There were people whose sole purpose was dedicated to testing hazardous materials and clearances.
- 2. CSXT and NS believed that they recognized the IT challenge. Their approach was to avoid massive changes on Day One by switching over only the minimum CR IT systems necessary to ensure a smooth Day One integration. CSXT in particular went through what it believed to be exhaustive testing regimens to ensure the switch over would work. The success, although not without problems, was noteworthy. The problems previously outlined by FRA did appear, although both railroads believe that extensive testing to a large degree mitigated the problems.
- 3. There were cross-functional teams, including business and technology, testing in Baltimore, Jacksonville, Philadelphia, and Pittsburgh. There were special testing labs established and the teams tested over 70 scenarios, 2,000 conditions and resolved over 900 defects in the Conrail and CSXT systems prior to June.

One month after the Split-Date, a new transportation reporting capability test demonstration was implemented in the Toledo CSXT terminal. CSXT then began to roll out to field locations its new "transportation" application with a "coaches" meeting held on October 5, 1999. Going forward, the CSXT rollout program consisted of different phases and locations labeled as "chunks." CSXT decided to reschedule its original ambitious plan for a system wide implementation so that its training resources would be able to fully match the amount of individual site location work. Chunk 1 "Transportation" rollout began in early October 1999 at Indianapolis. This rollout, of field site Transportation applications, is expected to continue into July 2000 at a pace that matches trainer and coach availability. Chunks 2 through 5 are being scheduled.

Certain other focused applications were also tested in July, including crew Management, Paperless Payroll, and "Transflo." These three system improvements and rollout on to previous Conrail territory and yards were completed by December 1999. In addition, work on Intermodal management applications and specific automobile management systems were completed by the end of 1999.<sup>13</sup>

While the transportation systems rollout continues, CSXT has been engaged in a number of very detailed quick action team studies to manage location specific transportation problems requiring IT backup support. The topics of these studies were examined at each SIP review and included CSXT progress metrics on their efforts to identify the root cause of the following IT problems:

<sup>13</sup> October 13 SIP Meeting with CSXT 63

- Accurate "hold car" counts and means to get cars moving with documentation
- Cars Rerouting across the rail network ("looping")
- Extreme variation and fluctuation in elapsed hours for cars, particularly for hazardous materials cars
- Timeliness of Car Event and Train Activity Reporting
- Re-occurring Categories of "Event-Errors"

CSXT is under aking a hazardous materials no bill improvement effort, which was discussed in the December 14 meeting with FRA. The work will use IT procedures to search for errors. In a study completed by CSXT (Table 8) and discussed in full with FRA, the following broad categories of HAZMAT errors exist.

Customer Failure to Bill Timely basis	32%
Conductor pulled car by mistake	22%
CSXT Customer Service input error	10%
Missing 417 WB on interchange	8%
Plant Switch before Car WB process	3%
Numerous Misc. Reasons	25%
Total Errors from CSXT Root Cause Study	100%

Table 8 Summary of CSXT IT Car Record Problems

Following the FRA IT and HAZMAT forum in Newark, NJ, the CSXT Hazardous Materials Department took several immediate steps to address the issues raised, which are outlined below:

- All CSXT hazardous materials Field Service Managers modified their schedules to increase inspection activities. The inspections focused primarily on the issues identified such as hazardous materials dwell time, no bills, out of sequence hazardous materials cars, ghost cars, and paperwork quality. Subsequently, all noted deficiencies were immediately communicated to the appropriate group for corrective action.
- 2. Inspection schedules were communicated by each manager to their respective FRA hazardous materials counterparts who were then invited to participate in any of the CSXT inspections. Each manager also asked their FRA counterpart to advise of their inspection schedules and requested permission to participate. Each manager also asked that any violation to be processed for civil prosecution be faxed to the CSXT Hazardous Materials Department so that immediate corrective action could be initiated. This enhanced inspection process will continue into the foreseeable future.
- 3. CSXT's Chief Safety Officer distributed a memorandum to CSXT senior management and Regional Vice Presidents covering FRA IT safety concerns. The memo was also distributed to all CSXT Hazardous Materials Sentinels. Additionally, a memorandum was sent to all Division General Managers and Managers of Operating Practices concerning 49 CFR 174.14 and the need to adhere to the 48 hour rule for moving regulated products.
- Hazardous Materials Field Service Managers began refocusing on dwell time audits as part of their inspection process.
- 5. CSXT also convened a cross-functional Hazardous Materials Issues Team to identify and resolve hazardous materials data quality issues. The team is chaired by the Director of Hazardous Materials and is comprised of representatives of the various customer service groups involved in the hazardous materials data quality process, CSX Technology, and others.

#### **NS Rollouts**

One of the early corrective rollout actions by NS was the creation of a 14 person intermodal operations desk in Philadelphia. To cope with the long-term consequences of continuing intermodal problems, NS decided in July/August to accelerate the rollout of its special Strategic Intermodal Management System (SIMS) reporting application. Originally, SIMS was to be rolled out over an extended 4 to 6 month period into December 1999. Five terminals had been established with SIMS software on Day One. The revised plan had a target completion date of mid-August 1999. Over 50 NS personnel were directly involved in this rollout.

To accommodate the longer rollout schedule for the TYES replacement of the older Conrail TRIMS system at former CR sites (now NS stations), NS resorted in the summer of 1999 to manual supplement of the automated IT systems. Additional personnel were assigned to manually supplement the IT systems. About 90 of these positions have remained on a long-term basis.

During the autumn of 1999, efforts on the NS focused on a number of initiatives to roll out additional IT support functions. For example, NS added another 35 AEI *scanners* to its expanded Conrail/NS network of lines. Also, NS advanced the rollout to field locations of its TYES system so that the work would physically be completed within an eighteen week period instead of the original plan of thirty weeks. To accelerate the TYES rollout, NS had an outside contractor provide training to NS local people. No-bills still occurring after TYES rollout were tracked by NS. As part of the accelerated rollout, IT personnel participated on site in deployments. This provided a better understanding of enhancement needs. Also, additional software modifications to improve TYES functionality were made during the rollout period.

The physical rollout of the new TYES equipment was completed on December 7. However, there were reports of a lag in the training of local NS people. A report from one FRA inspector, dated Friday, January 1, 2000, showed how a lack of training beyond first line supervision resulted in an escalation of "no-bill" freight cars in one particular Ohio terminal.

NS did provide training to Conrail personnel that were to come to NS on using NS HAZMAT emergency response plans and how to report environmental spills. Copies of the local and division emergency action plans were distributed to Transportation, Engineering, and Mechanical supervision. FRA was advised about the Sentinel program and other related safety training.

NS has stated that since the Split-Date, personnel from IT, Central Operations Center at Atlanta, Operating Rules, and HAZMAT managers have been working in an ongoing effort to assure compliance with HAZMAT regulations. An intensive HAZMAT audit was conducted by NS, and 109 audits took place between June 3 and December 14, 1999. FRA participated in the HAZMAT audits on the Dearborn Division of NS shortly after the Newark IT meetings.

#### **Conrail Shared Assets Rollout**

There has been no rollout of new systems on CRCX equivalent to that of TYES on NS. Prior to the Split-Date, a decision was made to keep the older Conrail TRIMS yard operations software in place and updated. The system has worked reliably over many years, and the local CRCX employees are familiar with its capabilities. The system was made Y2K compliant through the joint efforts of CRCX, CSXT, and NS.

However, during the summer of 1999, the transition from existing Conrail systems to the systems of the new owners meant that five independent computer systems were simultaneously in use to handle various portions of CRCX traffic movements:

- CSXT in house system
- A short version of CR TRIMS at former Conrail locations (now CSXT locations)
- NS TYES system
- A short version of CR TRIMS at former Conrail stations now NS locations
- CONRAIL TRIMS at all shared asset management centers

Conrail clerks and operating personnel needed to be familiar with all five systems in order to ensure that movements were properly reported. Due to lagging training schedules, they often lacked such familiarity. Therefore, FRA recommends that CRCX reporting be transferred either to TYES or to the CSXT Work Order Reporting System (WORS), and the use of Conrail's TRIMS be discontinued as quickly as possible.

## F. FRA IT/HAZMAT Findings

A team consisting of FRA and consultants researched all of the available incidents, email alerts, and phone messages that accompanied the six months of continuing IT safety related issues. This team received the cooperation of numerous parties within all three carriers (CRCX, NS and CSXT).

The five case studies reviewed in this report were selected as "representative" of incidents that occurred across the entire span of integration into December 1999.

Listed below are FRA's short-term suggested remedial actions to prevent further safety related IT incidents as the Conrail integration process continues.

The lessons learned during this review also suggest a process for IT integration that should govern future rail acquisitions. That process should include more "live" testing of transportation data before decisions to begin integration are executed.

### **IT RECOMMENDATIONS (SHORT-TERM):**

- CRCX should be treated as a carrier in the interchange route, and should receive all standard 417 and 418 documentation messages for integration into the CR TRIMS system.
- Customer car releases by FAX alone should not authorize a car movement (pick-up) by CRCX Shared Asset local crews.
- Waybill or enhanced TRAIN II or other Enriched Messages to CRCX should be the only authorized process to allow car pick-up by a Conrail crew.
- Immediate training classes for all senior supervision clerks and yardmasters, on all CRCX work shifts, for ability to use NS TYES and CSXT systems.
- Backup passwords and ID's should be maintained with CRCX IT staff with a 24 hour hot-line access from and to each yard location.
- Manual classification on cars without proper "waybill" enriched fields, should be checked by backup fax confirmation by "final destination" road, if known, or by email or fax to the CSXT or NS. One standard procedure should be adopted.
- Exception Reports should automatically be generated and then checked against each of the carrier records, if not for all cars, then for hazardous materials "capable" cars or shipper patterns.

## **IT RECOMMENDATIONS (LONG-TERM):**

- Future rail combinations must test their post acquisition proposed operating systems against adequate "sample size datasets." Tests against Conrail data were often too small to adequately judge their accuracy rates with complete daily transaction files.
- Future rail combinations must test the new "proposed" data systems under conditions that reflect "live transactions."
- Proposed post integration system rollouts often use "training" after the new systems are up and running and have already replaced the old systems. Henceforth, training should be completed as a prerequisite of cutting over to the new systems.
- Training has to include both field location people, on all three-work shifts, and must include train & engine people. T&E crews are required to have possession of Hazardous materials information on-board the trains.
- Both NS and CSXT IT system rollouts should be accelerated where possible to complete no later than mid-2000.

If CRCX is not made part of interchange movements as suggested by FRA, then the longterm goal should be for NS and CSXT to integrate their IT systems into CRCX (shared assets) and cease use of TRIMS

## V. Future Planned SIP/Safety Actions

## A. FRA Merger Safety Integration Program Monitoring

FRA has overall responsibility for the monitoring of all safety actions by railroads and enforcement of all safety regulations. In the Memorandum of Understanding (MOU) executed by FRA and STB on May 19, 1998, FRA was charged with the oversight and monitoring of the safety integration of the Conrail purchase by NS and CSXT. FRA has required the preparation of SIPs by both railroads, and has reviewed SIP items with the railroads on a regular basis since the control date of June 1, 1999.

FRA anticipates that the same close surveillance of the three railroads (CSXT, NS, CRCX) will continue throughout 2000 and 2001 or until safety integration issues have been completely resolved. However, from mid-2000 forward FRA will be utilizing FRA Safety Assurance and Compliance Project Managers to assist in directing and managing the surveillance effort (see modified organization chart, figures 9A through 9D, beginning on page 71). Primary responsibilities for overseeing this surveillance will pass from the assigned FRA Deputy Regional Administrators to the project managers by the end of calendar year 2000. Responsibilities of the project managers will include:

- Continuous contact with senior railroad management and monitoring of performance at all levels at the earliest possible stage during proposed acquisitions. This will allow for appropriate operational/safety planning, coordination, and development of Safety Integration Plans by the railroads. These SIPs are to be drafted in accordance with FRA's Safety Integration Plan Guidelines.
- 2. Data collection required for FRA to respond to STB inquiries, filings, surveys, audits, and/or requested reports, both prior to and following acquisitions.
- Periodic SIP/safety reviews of major acquisitions, including the establishment of regional teams to carry out continuous "real-time" integration monitoring.
- 4. Following STB approval of each major railroad acquisition, generation of periodic reports of SIP/safety integration to keep interested parties informed of the status of the acquisition.
- 5. For each major railroad acquisition undergoing STB/FRA oversight, preparation of a comprehensive, formal semi-annual report (twice per year) on safety integration progress with the STB. This report will include information from the regional teams and summary writeups of safety topics.

FRA will continue to closely monitor the safety and service of NS and CSXT through the Year 2000. The next SIP/Safety reviews were scheduled for the weeks of March 27 through April 17, 2000. FRA will continue to produce a regular internal report (monthly rather than weekly as in the past) tracking key performance indicators for NS, CSXT, and CRCX.

The next Biannual report by FRA to the Surface Transportation Board is due in June 2000. However, FRA expects that monitoring of the three railroads will continue to at least until the end of 2001.

## **B.** Joint FRA/STB Rulemaking

Staff from the Office of Safety and the Office of the Chief Counsel continue to work on the development of a joint rule with the STB covering the requirement of Safety Integration Plans (SIPs) for railroad acquisitions. A Notice of Proposed Rulemaking (NPRM) for this joint purpose was first published in the Federal Register on December 31, 1998. Comments were received and a formal hearing was held in May 1999.

FRA will continue to work with STB to ensure adequate regulatory oversight of the Conrail purchase as well as of other future acquisitions. Should circumstances warrant, FRA may request additional regulatory conditions on the Conrail purchase, or on other acquisitions. FRA's focus is on the safe provision of service by the nation's railroads, and FRA will take whatever actions are appropriate subject to the agency's legal mandate.

### Figure 9A: CRCX SIP Team Surveillance (Revised 2000-2001)



Figure 9B NS SIP Team Surveillance (Revised 2000-2001)



### Figure 9C: CSXT SIP Team Surveillance (Revised 2000 - 2001)



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## VI. FRA's Overall Safety Assessment/Summary

The three railroads (NS, CSXT, and CRCX) have achieved a laudable safety record since June 1, 1999, despite operational difficulties lasting for many months. This achievement is reflected in their closure of many of the identified safety and training issues identified in the SIPs.

To review:

- 1. Prior to Split-Date, CSXT committed to a total of 218 action items in the 13 areas covered by its SIP. As of the end of December 1999, 32 CSXT items remained outstanding.
- 2. Norfolk Southern committed to a total of 85 action items in its SIP. Of these 85 NS items, 37 are complete and have been closed out as of the end of December 1999. 22 items are described as "ongoing." Most of these are training programs which must continue indefinitely; a few are capital investments for which planning and design must still be completed. This leaves a total of 26 outstanding action items that still must be completed. Some are minor.
- 3. The CRCX SIP initially included 23 action items developed in meetings with the FRA, as will as 16 Appendix Q conditions imposed by the Surface Transportation Board in its approval of the Conrail split. As of the end of December 1999, 17 of the CRCX action items have been completed. Three are classified as "ongoing". The remaining three involve information systems integration with CSXT and NS, and the installation of cab signals on CRCX-assigned locomotives. Both are dependent on the parent roads' schedules and staff availability.

Notwithstanding the above, FRA's conclusion is that as of year's end 1999, although overall safety statistics have been favorable, neither CSXT nor NS can point to sustained progress in returning to the service levels of former Conrail prior to Split-Date. Excessive dwell time of cars in major yards and lengthy delivery times for hazardous commodities are of particular safety concern. Documentation procedures for HAZMAT, as field inspections have revealed, are inconsistently followed. The overall accuracy rate of HAZMAT documentation is, in general, poorer than Conrail's record in the year preceding June 1.

Service and safety are related, and FRA remains concerned (despite a generally good safety record) about the potential safety consequences of the hiring of many new train service employees. There is also the potential for fatigue-related accidents when employees must work many long days with no relief. One of the leading causes of excessive hours of train service appears to be related to the Information Technology support functionality. Various IT system issues in the Post-Split Conrail timeframe included problems with crew scheduling, crew qualification database records, car routing, train makeup, and late departure of trains. All of these factors contributed to traffic congestion and overworked crews.

The potential for safety consequences when railroads cannot deliver reliable transportation service leads FRA to offer a number of recommendations both for correcting the observed problems at CSXT and NS and for avoiding such problems in the future.

### **Short Term Recommendations**

- CRCX should be treated as a separate carrier for the purpose of interchanging cars. This will
  address a number of problems resulting from the so-called "soft interchange" process now
  used.
- Senior supervising clerks and yardmasters, on all CRCX work shifts, must be trained to use NS Thoroughbred Yard Enterprise system (TYES) and CSXT systems.
- A standard procedure should be used to manually check cars without proper identification of contents, origin, or destination.
- Exception reports should be automatically generated and then checked against each of the carrier records, if not for all cars, then for hazardous material "capable" cars or shipper patterns.

### Long Term Recommendations:

- In future mergers, proposed post-merger systems must be tested against more complete samples of data, and in an environment more closely resembling "live" transactions. Tests carried out by NS and CSXT often involved data samples too small to permit an accurate judgment of accuracy rates.
- Training in any new systems should be completed prior to cutover. Training must include field personnel as well as train and engine crews.
- NS and CSXT IT system rollouts should be accelerated where possible to complete no later than mid-2000.
- If CRCX is not made part of interchange movements as suggested by FRA, then the longterm goal should be for NS and CSXT to integrate their IT systems into CRCX (shared assets) and cease use of TRIMS.

## **Operational Recommendations:**

- Based upon the performance of the three railroads in this acquisition, carriers involved in future mergers of this magnitude are advised to conduct <u>more intensive reviews</u> of their proposed Operating Plans 1) to identify areas of potential difficulty (particularly IT and HAZMAT documentation issues), and 2) to identify early-on preventive measures prior to the implementation of their proposed transaction.
- Railroads engaged in a complex transaction should provide more advanced safety training of supervisory and operating personnel at common or allocated terminals, to ensure adequate staffing and carryover of institutional knowledge -- including knowledge of Federal Regulations.
- It is evident, based upon the acquisition performance of the three railroads that a more intensive review of proposed crew assignments and crew training needs to be performed by the railroad prior to acquisition initiation, to ensure that sufficient crews are trained and available to operate rail service as proposed by the merging railroads

FRA will continue its close surveillance of the merger safety integration during 2000 and 2001 (and longer, if required). Selected safety related operating problems are continuing into the seventh month of Conrail split and integration, and FRA continues to monitor their effects on safety and service.

# Appendix A

# Graphs of Safety Performance, 1995 - 1999

# Appendix A

Graphs of Safety Performance, 1995 - 1999

Figure A-1: Total Accidents by Railroad 1995 1999



Figure A-2: Number of Rail/Highway Crossing Incidents 1995-1999



Table A-3: Total Casualties 1995 - 1999



Table A-4: Number of Hazmat Inspections by FRA By Month, 1999



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Figure A-5: Total FRA Inspections by Month 



# Appendix B

Safety and Operations Data Conrail Integration Trends as of Week 31 (end of December 1999)





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U.S. Department of Transportation

Federal Railroad Administration AUG 3 0 2000

The Honorable Linda J. Morgan Chairman Surface Transportation Board 1925 K Street, N.W. Washington, D.C. 20423-0001 Office of the Administrator

400 Seventh St., S.W. Washington, D.C. 20590

SURFACE 12 4a PH '00

Dear Chairman Morgan:

Federal Railroad Administration (FRA) is forwarding herewith its <u>third biannual status report</u> to the STB covering the safety integration of the Conrail merger (enclosed). This is pursuant to the Memorandum of Understanding Between the Surface Transportation Board (STB) and the FRA dated May 19, 1998.

This report dated August 30, 2000, covers the period of FRA's surven! ance of safety integration from January through June 2000. In this third reporting period, FRA continued to hold formal review meetings with the three acquiring railroads CSXT, NS, and CRCX (Conrail Shared Assets) on a regular basis--March, April, and June 2000.

FRA's 43-member Merger Surveillance Team during this period conducted special field audits and safety reviews which included the investigation of multiple train runaways on NS' Buffalo Line, at Keating Summit, during January and February and a similar train runaway (with fatality) which occurred on CSXT in late January. FRA believes that there is a merger-related pattern reflected by these incidents and other similar incidents which have occurred following recent large mergers, e.g., the repeated runaway trains on BNSF at Cajon Pass in California, which occurred in 1996 shortly after the Burlington Northern and Santa Fe merger. This pattern appears to be related to the lack of appropriate planning and operations oversight during early phases of the merger integration.

The FRA team also conducted a safety audit of CSXT track maintenance activities during February and March of 2000. This audit resulted in the need for execution of a Compliance Agreement between CSXT and FRA, wherein the railroad agreed to initiate a number of measures to improve track inspection and maintenance procedures. These track inspection and maintenance issues have subsequently been addressed by CSXT.

A continuing item of safety concern and monitoring since Split Date has been our concern with Information Technology (IT)/Hazmat documentation. Although new IT systems at NS and CSXT have been "rolled-out" over the past eight months and significant implementation progress made, there have continued to be some incidents occurring at NS, CSXT, and CRCX involving lack of sufficient documentation for the transportation of hazardous materials. However, this situation is improving with each passing month. The above noted safety concerns have been addressed by the three railroads in either SIP or SACP review meetings with FRA, whereby safety action plans have been developed and committed to by the railroads.

Overall, both the safety and service performance records of all three railroads have improved since FRA's last report to the STB (December 1999). However, there has been an increase in employee on-duty injuries that is of concern, based upon comparisons of first-half-of-year data for 1999 and 2000. During the six-month period January-June, two employee deaths occurred on CSXT and one on NS.

Additionally, FRA is concerned with the trend shown at CSXT and NS in which <u>capital</u> <u>spending</u>, in total, appears to be declining for post-merger NS and CSXT (and CRCX) as <u>compared with pre-merger totals</u>. Rolling stock and track infrastructure investments must be maintained at high levels for safety assurance.

Due to the safety concerns described in this report, FRA will continue to monitor carefully the specific safety issues that have been cited. As this report indicates, the three railroads have made considerable progress throughout 2000 with their SIP/safety, performance and training initiatives, and integration. In FRA's judgement, over the past year they have established the required platform for a sound and continuously improving safety record.

I wish to thank you and STB's staff for patience in awaiting the finalization of these very important reports on the results of safety integration occurring at CSXT, NS, and CRCX (the Second and Third reports). FRA's next report to the STB is planned for January 2001, covering the period July through December 2000.

Sincerely,

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Jolene M. Molitoris Administrator

Enclosure



U.S. Department of Transportation

Federal Railroad Administration

## Biannual Report to the Surface Transportation Board January - June, 2000

# <u>Conrail Merger Surveillance: NS, CSXT, and CRCX</u> <u>Third Safety Integration Plan/Safety Update</u>

For: Surface Transportation Board c/o The Honorable Linda J. Morgan Chairman

(In compliance with MOU of May 19, 1998)

Submitted by: Federal Railroad Administration Washington, D.C.

August 30, 2000

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## **Executive Summary**

This is the third in a series of Biannual reports to the Surface Transportation Board (STB) that addresses the status of the Conrail acquisition by Norfolk Southern (NS) and CSX Transportation (CSXT).

On September 4, 1998, Federal Railroad Administration (FRA) initiated a long-term monitoring program for the Conrail acquisition integration by issuing its *Conrail Merger Safety Assessment Surveillance and Plan Safety Integration Plan (SIPA)*<sup>*i*</sup>, which set up a 33-member Merger Surveillance Team made up of FRA headquarters staff, deputy regional administrators, specialists, and inspectors. The Team performs regular reviews of the railroads' SIPAs, sets up labor/management/public "listening sessions" and conducts both planned and unannounced safety reviews of Conrail, CSXT, NS, and CRCX operations. The SIPAs are "living" documents that undergo continued refinement as conditions at CSXT Transportation, Norfolk Southern, and Conrail (CRCX) continue to evolve.

In this third reporting period to STB, there have been formal reviews/revisions of the SIPAs following each of the approximately bi-monthly meetings between FRA and the three railroads. As of May 2000, all SIPA items for the three railroads have either been closed out or continuing programs (e.g. training) have been put in place to address them. This report provides a review of progress from January through June of 2000.

FRA's Merger Surveillance Team conductor' pecial reviews of the multiple train runaways on NS' Buffalo Line, at Keating Summit, PA, during sanuary and February. FRA staff also conducted a safety audit of CSXT track maintenance activities during February and March of 2000. This audit resulted in a compliance agreement between CSXT and FRA, wherein the railroad agreed to initiate a number of measures to improve track inspection and maintenance procedures.

Meetings to perform safety reviews, amend, or add to the SIPAs were held in March, April and June 2000. Overall, the safety and performance records of all three railroads have improved since the FRA's last report (December 1999). However, there has been an increase in employee on-duty injuries that is of concern, based upon comparisons on first half of year data for 1999 and 2000. In the six month January – June period, two employee deaths occurred on CSXT, and one on NS. Additional items of concern include:

- Information Technology (IT) problems, specifically the lack of sufficient documentation for transportation of hazardous materials; NS has recently issued a directive providing several manual "fixes" for this problem
- Multiple train accidents, mostly runaways at Keating Summit, PA, and Bloomington, MD, on NS and CSXT respectively.
- An increase in employee injuries/deaths on duty during the first six months of 2000

FRA continues to carefully monitor the impact of poor operating performance on safety, particularly, the problems both railroads have had in properly documenting the movement of hazardous materials (hazmat).

Due to ongoing selected safety related operating problems, FRA will continue its close surveillance into the foreseeable future and will monitor the effects on safety and service.

<sup>1</sup> Federal Railroad Administration, Conrail Merger Surveillance: Norfolk Southern, CSXT Transportation, and Conrail SIPA/SAFETY Update, period July 23, 1998 – April 15, 1999

## I. Safety and Service Monitoring by the Federal Railroad Administration

## A. Background

In recent major rail mergers, the Surface Transportation Board (STB) for the first time required applicants to work with the Federal Railroad Administration (FRA) to formulate **Safety Integration Plans (SIPA's)** to ensure that safe operations are maintained during the entire period of implementation of any specific merger. FRA saw development of these SIPA's as a way to help ensure the safe integration of acquired properties. On November 3, 1997, STB issued an order requiring NS and CSX to prepare their respective SIPA's within 30 days.

To aid in the development of these SIPAS, FRA established *SIPA Guidelines*<sup>2</sup> that outlined 13 safetycritical areas that each applicant's SIPA would be required to address. NS and CSX each worked collaboratively with FRA to develop their SIPA's and met STB's filing deadline (December 3, 1997). FRA acknowledged in its final brief with STB that the applicants had developed sufficient SIPAs addressing all of the significant safety issues, and that they provided rational approaches for merger integration.

On May 19, 1998, FRA and STB executed a Memorandum of Understanding (MOU) providing that, if the Conrail merger were approved, FRA would:

- monitor the impact that the integration of operations has on safety, keep STB informed of
  progress in implementing CSX/NS/CRCX SIPA's and of any deficiencies or problems;
  thereby enabling STB an opportunity to exercise oversight authority and take corrective
  actions to identified deficiencies and address safety problems arising out of the transaction;
  and
- provide periodic reports to the Board on the SIPA implementation process (at least biannually), including a final report when the proposed integration has been satisfactorily completed.

This is the third bi-annual report, covering the period from January 1, 2000 to June 30, 2000.

## **B.** FRA's Merger Surveillance Team

On September 4, 1998, FRA's Office of Safety initiated its long-term safety surveillance program for the acquisition. FRA's Conrail Merger Safety Assessment and Surveillance Plan was unveiled in an orientation session held at FRA headquarters for CSXT, NS, and CRCX operations and planning officers. Fifteen senior-level officers attended representing all three organizations.

<sup>2</sup> Safety Integration Plan Guidelines, Federal Ruilroad Administration (FRA) Office of Safety, (Washington, DC: November 7, 1997)

The items contained in FRA's merger surveillance program included:

- The SIPA's and accountability worksheets (SIPA's) filed by CSXT, NS, and CRCX with FRA, which detail the applicants' allocation of funds, personnel, training commitments, facilities, and other resources
- Current operating safety conditions at CSXT, NS, and CRCX and their acquired properties; safety
  audits and surveys; FRA's required statistical reporting; and inspections/violations identified by
  FRA inspectors
- Review of past and ongoing FRA Safety Assurance and Compliance Program (SACP) efforts conducted at each railroad
- Close review of progress made on safety conditions set by STB

Staff members from FRA's Office of Safety have been contacting planning officers from NS, CSXT, and CRCX at regular intervals to obtain updates of their SIPA's, identify new safety commitments (SIPA's are "living" documents), and assess the status of safety issues and concerns.

The established SIPA/Safety liaison review meeting officers for the three railroads have been:

Bruno Maestri, Vice President, Public Affairs Andy Corcoran, General Attorney
Chuck Wehrmeister, Vice President, Safety
John Drake, General Manager Safety, Environment, and Operating Practices
Jeff Stephensen, Director, Integration
Ronald Batory, Vice President Operations Craig Curry, Chief Environmental Officer

FRA designated four Regional Safety Assessment and Surveillance managers and 43 geographically placed acquisition inspectors/monitors, to provide close surveillance of CSXT, NS, and CRCX field integration of the acquisition. <u>Regular, periodic Region reviews</u> are conducted and <u>formal biannual</u> written reports identifying safety integration progress are provided by FRA to the STB. As noted previously, this is the third formal report, covering the period from January through June of 2000.

Changes to the staffing and organization of the acquisition monitoring activity were made by FRA for FY 2000. Figures 1A through 1D on the following pages show the current organization, including contacts for each of the three railroads. FRA assigned personnel include deputy regional administrators (Regions 1, 2 and 3), specialists in key areas, and FRA Washington staff from each discipline area. In particular, it should be noted that FRA has created a new position, Railroad Project Manager (RPM) to oversee and coordinate the efforts of FRA personnel monitoring each of the three railroads. The establishment of the RPM positions is intended to assure more effective cooperation between regional FRA inspectors and supervisors and FRA headquarters staff in Washington.

As part of the process of monitoring safety and service, SIPA reviews have been held with CSXT, NS, and CRCX approximately every two to three months since the "split date" of June 1. 1999. The most recent SIPA reviews were held with CSXT on June 14 in Jacksonville, FL, with CRCX on June 13 and with Norfolk Southern on June 15; both in Washington, D.C. In general, all three railroads made significant progress in completing their respective SIPA's. Also, the safety record of all three railroads have improved between year-end 1999 and the end of the second quarter of 2000.

A few specific and noticeable problems remain into the month of June, especially with proper documentation of hazardous materials movements. Also, a pattern of derailments and "run-away" trains during January and February is disturbing, especially in light of the overall improvement in safety shown by all three railroads.

The remainder of this report will discuss safety and service issues arising since the delivery of the second FRA report (for the period June – December 1999).

Figure 1A: CRCX SIPA Team Surveillance (2000-2001)



### Figure 1B: NS SIPA Team Surveillance (2000-2001)



### Figure 1C: CSXT SIPA Team Surveillance (2000 - 2001)







## C. General Assessment of January - June Performance

FRA had initially requested baseline accident/incident data from NS and CSXT for which the analysis of safety performance for the merger integration could be made on an ongoing basis. However, both railroads (NS and CSXT) have been unable to provide such statistics throughout the integration period of the merger. Therefore, no individual statistical assessment can be made with regard 'a individual railroad divisions of the acquired territories of NS and CSXT as compared to the pre-Conrail merger territories. This appears to be a unique problem related to the breakup of Conrail in that two railroads split a third railroad, while in other typical mergers one railroad would normally be acquiring another railroad in its entirety. Therefore development of safety statistics could be easily accomplished. FRA requires all railroads to report safety data on a system wide basis. Provisions for pre-merger gathering of baseline safety statistics should be a part of each merger applicant's SIPA in order to be able to compare with post merger territories.

FRA continues to closely monitor all three railroads. Overall, FRA inspections have remained at a high level throughout the Conrail integration period.

FRA has been tracking the safety and service performance of NS, CRCX and CSXT since the split date of June 1, 1999. Appendix A contains examples of graphs prepared on a weekly basis since the control date. The graphs in Appendix A are for Week 52 of the Conrail integration, the second week of June 2000.

As noted in the graphs, although there has been a slow improvement, operating performance on both railroads has yet to recover to pre-merger levels.

Dwell time in major terminals as of Week 52 remained longer than the first week of June 1999, and time on line for loaded cars was also much longer than during the base period. All told, the performance of both railroads in almost every respect is less than it was in May, 1999 (pre-merger).

Figures 2 and 3 on page 10 show safety performance for CSXT and NS for 1997 through 2000, during the first half year in each year. Note that, while total accidents/incidents for the first quarter of 2000 are down, "employee on-duty incidents" have increased for both railroads.

The first quarter 2000 data are the most recent available from the FRA Accident/Incident Reporting System.



Figure 2: CSXT Safety Performance 1997 – 1999 (January to June each year)

Note: Train accidents per 1,000,000 train miles Employee incidents per 200,000 hours worked





Note: Train accidents per 1,000,000 train miles Employee incidents per 200,000 hours worked

## D. Continuing Problems Identified in SIPA Reviews and FRA Field Inspections

### Safety Agreement between CSXT and FRA

FRA conducted a system wide track audit in February and March. The safety audit detected a significant number of track defects on several CSXT lines. Furthermore, track inspections were found to be inadequate, repairs of track defects were often incomplete, and track maintenance personnel experienced difficulty in getting time on track to perform either inspections or repairs.

Following the track audit CSXT and FRA entered into a Safety Compliance Agreement which includes provisions that will improve the railroad's track inspection and maintenance process. The FRA will assess CSXT's progress in January, 2001. CSXT Chairman John Snow reported that the specific track conditions cited in FRA's late March report were corrected by April 21, and that other identified problems were to be corrected within 60 days. In some cases, corrective actions by CSXT included reductions in operating speeds for passenger and freight trains to bring operations into compliance with FRA track safety standards. Also, under the Compliance Agreement with FRA, CSXT will increase the frequency of track geometry inspections by its three test cars.

CSXT also agreed to submit performance standards for its large scale track gangs and enhance track department management oversight procedures.

A complete copy of the Safety Compliance Agreement has been forwarded to the STB.<sup>3</sup>

### SACP CSXT Operations Review by FRA

During the week of April 17, 2000, FRA conducted a review of the CSXT Operations Center. The review, conducted by FRA's Operating Practices Division, was the result of numerous dispatcher errors in Rule 251 territory (double track with "current of traffic" signaling in one direction on each track). In addition, dispatchers were improperly handling 704 and 707 authorities. FRA's Operating Practices Division is continuing to monitor this situation and is working with CSXT through the SACP process to find and effect final solutions.

CSXT has completed hazmat procedures training on all the newly acquired intermodal territories in the Northeast. CSXT hazmat training is now complete throughout the system.

FRA inspectors are still reporting problems with hazmat documentation despite the activities noted above. CSXI, CSXT, and FRA met in Cambridge, MA on April 11, 2000 to address the problems in the North Jersey area. CSXT and CSXI agreed to develop an action plan to address this issue.

### **SACP NS Operations Review**

On January 1, 2000, NS implemented the System Teamwork and Responsibility Training (START) program. START procedures were developed jointly by NS management, the United Transportation Union (UTU), and the Brotherhood of Locomotive Engineers (BLE). This program will involve union

<sup>3 &</sup>quot;Safety Compliance Agreement Between CSXT and the FRA, concerning Track Conditions", April 20, 2000.
officials in the disciplinary process and will rely on alternative training rather than disciplinary hearings for minor rules infractions. It also provides alternatives to formal disciplinary hearings for employees who sustain injuries. START covers the 12,800 NS employees represented by BLE and UTU.

In January 2000 the SACP team proposed changes in railroad operating practices to prevent incidents such as the death of an NS machinist on November 4, 1999. He was struck by a train moving on an adjacent track. As a result of the SACP review with NS, the following major actions have been taken:

- The track position where locomotives are added or taken off of a train has been relocated to a safer position near a Cleveland yard at mile post 190.
- Positive "blue flag" protection has been added to the worksite where locomotives are added or taken off.
- Possible placement of parallel main into status of "adjacent" track as used by M-O-W track workers. Subsequent action was to relocate the locomotive change out to a location within Rockport Yard (Westside of Cleveland).

# II. SIPA Progress Report, January – June

## A. CSX Transportation

Most SIPA items outstanding as of December 31, 1999 have been closed. A few items remain, and one new item has been added. Outstanding and new items are as follows:

- Publication of consolidated Safe Job Procedures (SJPs) has been scheduled for July 1, 2000.
- The safety focus group established during the first quarter 2000 is being directed by Mike Ward, the Executive Vice President of Operations. Named Senior Staff Overlap Team, these leaders meet at headquarters on a monthly basis. Union leadership is invited to participate at some of the safety and business integration sessions. Field site meetings are also held during each month with recent meetings at the large terminals in Albany, Buffalo, Willard, Toledo and Rocky Mount.
- Procedures for separate operational testing on former CR (NORAC rules) and CSXT have been implemented.
- Consolidated bridge inspection standards have been promulgated system-wide across the expanded CSXT post merger network.
- Installation of Snyder II fuel systems is complete. This provides automatic cut off during fueling. It helps prevents spills.

# **B.** Norfolk Southern Corporation

Most NS SIPA issues have been closed out. However, NS has experienced considerable difficulty in coming to agreement with states and localities over specific noise abatement measures. Efforts continue to resolve these issues.

Specific NS SIPA actions include the following.

- NS has now completed integration of Conrail operations training into the McDonough, GA, NS training facility. Locomotive engineer trainees continue to use both the former Conrail facility at Conway Yard in Pennsylvania and the NS Georgia facility.
- NS has completed preparation and distribution of 794 local community hazmat emergency response plans. Sixty-two of these (8%) were required by the STB. The rest were distributed on a voluntary basis by NS.
- NS now operates with two Operating Rule Books: NORAC rules for the former Conrail territories, and NS rules for the remainder of the railroad. The eventual target is to produce an integrated rulebook. NS is now examining a draft of combined NS-1 and EC-99 equipment operation rules.
- NS will continue to perform locomotive running repairs and quarterly inspections at both Conway and Enola, PA. Plans for a new facility are under review.

# C. CRCX (Shared Assets) Items

As of May 2000, all SIPA items identified prior to Split Date have either been completed, are ongoing (e.g. training), or are dependent on the parent roads' schedules and staff availability

One of the safety success stories has been the continuing improvement in CRCX's overall safety culture. May of 2000 was just one of those highlights as the railroad showed a ZERO incident rate among its employees on the basis of "lost time" frequency per 200,000 hours worked.

CRCX ended the year 1999 in the third best employee injury rate among switching and terminal companies with a loss time injury rate of 1.61 per 200,000 man hours.

Figure 4 graphically illustrates the lost time frequency rate on a year to date basis for the shared asset operation of CRCX, and Figure 5 indicates the safety performance change on a year to date basis for 2000 versus 1999, for the CRCX corporation as a whole and for each of its three operational regions. The regions include Northern New Jersey (NNJ), Southern Jersey and Philadelphia (SNJ) and the Detroit area. Only the South Jersey area had a negative change. The positive improvement in North Jersey was 75%.



Months Since Split Date of (June 1, 1999)

Figure 5: Percent Change in CRCX Safety Performance (Year to Date May 2000)



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# III. Accidents and Run-Away Train Safety Issues

# A. CRCX

#### Sterling Heights, MI

CSX Transportation performing switching movements on Conrail Shared Assets trackage discovered a hazardous materials release in Sterling Heights, MI on the morning of March 20, 2000. The crew immediately vacated the site and notified the CRCX Yard Master via radio. Tank car GATX 6000 was loaded with RQ Hydrochloric Acid. A small amount of acid vapor had escaped from a hole in the tank shell at the "B" end of the car on the left side. An evacuation of 2,500 plant employees was ordered in the Industrial Park for up to one-half mile to the east and downwind from the yard. Included in the evacuation were 1400 workers of the General Dynamics Automotive Parts Plant. No residences were evacuated. There were no injuries or derailment related to this incident. The evacuation was lifted on March 20 and yard operations resumed pending clean-up and investigation as to cause. The cause was determined to be defective rubber lining in the car.

## B. CSXT

#### Bloomington, MD

CSXT Train C021 derailed 76 of 80 coal cars in a "runaway" near Bloomington, MD on January 30, 2000. The derailment occurred on mountain grade territory during light snow and below-freezing temperatures. A fifteen-year-old male was killed and his mother injured when the derailment struck a local home. One adult male was also treated for minor injuries and released. Field investigation by the FRA (Region 2 officers/inspectors) and NTSB indicated non-operational dynamic brakes on two of the head-end locomotives and possible defects in the train's braking system and/or improper train handling. The EOT device also may not have activated. The train was traveling down a 2.4% grade and reached 56 mph, in a 25 mph authorized zone. Follow-up laboratory and brake system tests are being performed by FRA/NTSB to verify the cause(s).

#### C. Norfolk Southern

#### Keating, FA

On January 13th NS Train CNAL-0 (13,124 trailing tons) was descending the 2.4% mountain grade at Keating Summit located at MP 107-114 on the Buffalo Line of the Harrisburg Division. The maximum authorized speed was 15 mph, but the train "ran away" out of control reaching the speed of 68 mph. On February 1st NS Train CANL-1 (13,234 trailing tons) had reached a speed of 50 mph on the same section of track (some 20 hand brakes had also been applied to this train). FRA's investigation indicated that these problems began to intensify following NS's acquisition of Conrail in June 1999 as a result in part of the exodus of senior qualified engineers on the Buffalo Line to CSXT,

plus a significant increase in post merger north/south train tonnage and new run through service with CN. In many cases, the CN locomotives had either no dynamic brakes or non-existent dynamic brakes. Through a series of train rides by FRA's personnel in early February, FRA verified that appropriate train handling/operating instructions on handling longer heavier trains (and some CN locomotives) had been put into effect. A full report and corrective action plans for the Keating PA incidents were reviewed at the April 4<sup>th</sup> NS SIPA/safety meeting.

FRA believes that there is a linkage between this mountain grade runaway train derailment and other merger related activities. The increase in train tonnage and run-through operations was the result of new NS marketing efforts occurring since merger. NS's Keating Summit mountain grade runaways were established to be directly related to the merger. Furthermore, FRA believes that there is a linkage between the recent large mergers and various runaway train incidents, starting with similar incidents that occurred following the BNSF merger and a series of runaway trains on the Cajon Pass in California.<sup>4</sup> This linkage is related to the lack of appropriate planning and operations oversight by CSXT and NS.

# IV. Lessons Learned from Previous Mega-Mergers

The FRA believed that the NS - CSXT Conrail transaction would be a great deal more difficult then the previous BN-ATSF or UP and SP transactions when it came to issues of operational complexity and safety training and planning. In the UP transaction alone, nine fatalities of on duty employees occurred as the UP/SP merger was implemented. A key concern of FRA in asking the STB to require Safety Integration Plans (SIPAs) was that the pattern of accidents and fatalities observed in the BNSF and UP/SP mergers *not* be repeated in the Conrail acquisition. Fortunately, the pattern has not repeated.

However, some of the lessons learned from an examination of the previous mergers were not fully applied during the Conrail implementation. Areas of specific concern to FRA need to be examined in the light of what transpired during the Conrail planning and the initial operational integration. The areas of concern include the following:

- Operational Testing of new crews should be more disciplined and take place so that the crews being examined are not aware of the locations where banner tests and radar tests are to be held, Management toc often repeatedly uses the same test locations.
- Qualification of crews for certain territories and for operation of certain equipment (such as dynamic brakes, or foreign locomotive equipment) needs to be strengthened.
- Hazmat documentation procedures when cars move to and from former Conrail locations
  or to and from CRCX Conrail Shared Asset locations need to be strengthened.

<sup>4</sup> See FRA, Safety Assessment of CSX/NS Proposed Acquisition of Conrail; Submitted to the STB. October 21, 1997 "Cajon Pass Derailments - page 11.

- Improper training of crews for handling of foreign locomotives with dynamic brakes and training of how to perform proper tests of such braking equipment occurred some extent during the Conrail implementation, as it had in the BNSF and UP/SP mergers.
- Fundamental Computer Systems testing before the day-one operations began, while perhaps more lengthy and involved then in previous mergers, nevertheless could have been improved upon more by CSXT and NS.
- Problems in handling <u>information flow</u> between the Operation Control Centers (NOC or SOC in previous reports) during the BN-ATSF and the UP-SP mergers became problems of handling certain shipper car movement and commodity information between Customer Service Centers during the Conrail transaction. The Conrail Center was to be phased out, but in the early days it still housed much of the "institutional knowledge" about customer habits and both car movement and hazmat movements.

A review of the nine pages of documentation from FRA's BNSF and UP/SP studies reveals that many of the lessons learned were picked up and applied safely by CSXT and NS<sup>5</sup>. Nevertheless, some of these issues did reappear during the Conrail transaction.

# V. Special Safety/SIPA Issues

# A. Hazmat Train Documentation Issues

Into May 2000, FRA continued to monitor CSXT new hire conductor training, including audits of the new hire understanding of the requirements for hazardous materials placed on freight equipment, and the possession of "consist documents" while the crews train.

To create greater awareness among its employees, CSXT has re-issued bulletin No. 9 on the importance, instruction and purpose of updating the hazardous materials placement list. As of April 2000, FRA confirmed that CSX-Intermodal had completed hazmat training on all the newly acquired intermodal terminals in the Northeast Corridor since the Conrail acquisition.

Even with the training noted above, FRA Hazardous Materials Inspection Forces were still reporting in April 2000 numerous hazardous materials document deficiencies on both inbound and outbound CSXT trains in the North New Jersey area. CSX-Intermodal, CSXT, and FRA met in Cambridge, MA on April 11th to address the continuing Post-Split Date problems of missing train crew documents and hazmat documents in the North New Jersey Area. CSXT and CSXI agreed to develop an action plan to address the train crew document deficiencies in this area. NS was not invited to participate at this CSXT focused meeting.

Results of the February through March 24<sup>th</sup> FRA Safety Review of the three carriers involved in the Conrail integration were posted in April. Defect ratio for trains which moved HM cars were as follows:

<sup>5</sup> op.cit. "Conclusions From The FRA Safety Review", pp. 5-13

- CSXT = 10 trains, 6 had violations
- NS = 29 trains, 7 had violations
- CRCX = 26 trains, 1 had a violation

As a result of the FRA's overall investigation in this February/March period, the following enforcement actions were taken:

- 24 violations
- 90 defects

During a routine paper work inspection on March 17<sup>th</sup> at the NS Harrington, DE, yard, an FRA<sup>6</sup> inspection of NS train M3GC116 from Enola, PA identified three loaded Liquefied Petroleum Gas (LPG) tank cars and one corrosive tank car out of position on the required hazmat placement list. The actual positions of these four cars in train were as much as 39 positions and as little as 11 positions out of place. NS's TYES Data System generates this paperwork, which is then provided to the T&E crews.

A similar violation was found during the same March time frame at the NS Abrams yard near Philadelphia.

Two tank cars containing LPG were discovered as "held beyond 48 hours" at NS's Conway yard. Date of violation: January 26, 2000. Car ID's were GLNX215 and UTLX30462. Research confirmed that the cars originated from Tosco Refinery (located in New Jersey on CRCX) as a no bill with destination unknown. Despite previous FRA IT Team documentation of this repeating pattern, the cars departed from Oak Island yard on Train 19G. NS accepted the cars, and subsequently moved them to western Pennsylvania. This suggested a continuous series of non-compliance incidents.

Into the month of June 2000, FRA inspectors were still finding some trains moving without documentation. For example, on June 7, 2000, NS train number 44AH509 was found by inspectors with improper shipping descriptions, the inspection took place in Abrams Yard, near Philadelphia.

All three railroads did undertake work to improve their capabilities in processing and managing hazardous materials. As an example, CSXT submitted five documents that outlined their efforts at process improvement in:

- organizational enhancements
- cross functional HAZMAT Focus Teams
- redesignated train documents

Some of this work was undertaken jointly with NS and with CRCX.

<sup>6</sup> In the spirit of cooperation, FRA did not "cite" NS or CSXT with many "non-compliance" discoveries-but local inspectors have in general kept their violation notes.

# **B.** Final Results of Newark IT/HAZMAT Workshop:

The FRA conducted an IT/HAZMAT Forum (workshop) with the three railroads on November 2-3 at Newark, NJ. By consensus, five areas were targeted as Action Items:

- Stop cars from moving without waybills.
- Reduce the large number of no-bill cars presently operating on all three railroads.
- Reduce dwell time of loaded cars to comply with HAZMAT 48-hour rule.
- Train clerical and train and engine crews on the new T systems.
- Enhance response times by users of the new CSXT and NS rollout IT systems.

As a result of the late March and early April SIPA/safety review with all three carriers, they will be meeting again to discuss the logic behind the missing computer generated documentation that continues to occur following the split of Conrail. In the interim, NS has disseminated a new policy for handling no bill cars (see below under "Information Technology").

#### 1. Chemical and HAZMAT Shipper Concerns

Chemical and HAZMAT shippers held a special forum on January 11<sup>th</sup> in Philadelphia to discuss common problems related to the integration. Surveyed members of the Chemical Manufacturers Association<sup>7</sup> report that a "doubling of transit times was a common complaint"<sup>8</sup>. This complaint is in part supported by the large weekly "days-on-line" carrier reports to the STB.

# C. Information Technology (IT) Issues

During the period January – June 2000, CRCX, NS and CSXT made significant improvements in IT processing and HAZMAT information management. By the 9<sup>th</sup> of February, Conrail people had the ability to access and print full waybills via the Conrail (CRCX) TRIMS-3 system. This improvement included access to HAZMAT information by March 2000, the number of CRCX "hold" or "no bill" cars had declined to about 4 percent.

In May 2000, a joint process review team (CSXT, NS, CRCX, FRA) completed its work of following up on information technology problems previously noted by FRA<sup>9</sup>. These problems were associated with car movements to and from the Shared Asset Areas. FRA field research documented a number of instances of mis-routing and mis-identification of cars in the summer and autumn of 1999; these continued into the spring of 2000. Many of the problems concerned movement of hazmat materials without proper documentation. FRA believes many of the problems were related to the lack of strong IT capability to automatically inform management and train crews about shipping requirements.

A recent policy statement issued by the joint process review team to address these problems relies for the most part on a series of backup manual, phone, fax, and clerical actions in order to ensure proper documentation of hazmat movements. The aim of these process changes is to provide support to

<sup>7</sup> Name changed in 2000 to American Chemistry Council.

<sup>8</sup> Individual railroad customers reported the doubling of transit time on some chemical shipments. All CSXT or NS chemical shipments did not double in transit time.

<sup>9</sup> Riannual Report to the Surface Transportation Board, May - December 1999, Second Safety Report by the FRA

yardmasters at Shared Assets yards. This suggests that an automated, technology based tool, with full functionality available to Conrail personnel (as it was pre-split), is not yet available in the fiftieth week of integration.

#### 1. CRCX IT Actions Reported During May 2000

The revised procedures and general policy statement issued by the Shared Asset Team on May 6th is found below, with restated language in an attempt to clarify unwritten but assumed details of the procedures. Some of this new procedure reflects contributions made by NS and CSXT people that worked with CRCX staff.

## May 2000: Week Number 50 Information Technology Related Process Changes for CR Shared Assets Car Movements, Revised Policy Guidance:

No movement of hazardous materials car into Shared Assets serving yard without proper hazardous documentation for that car.

HM car may enter serving yard ONLY with proper hazardous documentation Acceptable formats include:

- Work Order
- Bill of Lading
- Shipping Order
- or, other documentation

No car may move out of the serving yard unless it has been verified that a waybill exists in TRIMS.

Shared Asset management must ensure that car (shipment) is forwarded to the correct Shared Asset "owning" road (either to NS or to CSXT).

The following is a reprint of a policy instruction issued by CRCX:

# Step by Step Procedures within CRCX Operations and IT

- 1) Conrail Shared Assets Yardmaster contacts Shared Assets Mt. Laurel operations and "instructs" (communicates by phone) make-up of a specific train for specific tracks.
- Mt. Laurel "performs" (establishes the sequence for) blocking of that train, based on the use of "classification T-codes".
- 3) When train is made-up by the Yardmaster at the Conrail serving yard (MUTR), Mt. Laurel will then compare train owner (NS or CSXT) to each car owner, using the Conrail TRIMS inquiry function "IQAT", to identify any "out of route" freight cars. An out of route car is defined as a condition where the train owner and the car owner codes are not equal. (Example is an NS train containing CSXT T-code cars)

- 4) Green Light Go Condition exists "if all "car owner" codes are equal to the train owner. Yardmaster may then proceed with final train make-up, departure, etc. Note: the actual ownership or leased status and report marks of a freight car may be different than the "T-code car owner" term of reference used in these Shared Asset marshalling instruction:)
- 5) Exception Condition exists "if Mt. Laurel discovers that the train owner and "a" car owner are not equal. Mt. Laurel will then notify the Yardmaster, by telephone, to remove the out of route car(s) from the train.

# Manual Train Departure Backup Process<sup>10</sup>

Before a train departure is performed, Mt. Laurel verifies the AEI scanner data (locomotive and car placement order back to EOTD) and validates that T-classification car owner is equal to that train owner.

The Mt. Laurel center also will check for nobill cars in the train consist.

For cases where a T-code car owner is not equal to the train owner, or for a nobill car that was not effectively pulled per the instructions from Mt. Laurel, the Mt. Laurel center will then research and secure a copy of the appropriate waybill. Mt. Laurel will then be responsible to forward the waybill to the train owner by fax. If the train ownership is NS, NS will contact (by phone, or fax, or email) the t-code car owner and develop resolution to expedite handling. If the train owner is CSXT, CSXT will contact the t-code car owner.

#### **No-bill Circumstances**

If a nobill exits for a freight car on the train make-up document, and the t-code car owner is equal to the train owner, the Yardmaster will apply the same process-rule as described for situations where the car owner is equal to the train owner.

If a nobill exists for a freight car on the train make-up document, and the car owner is NOT equal to the train owner, the Yardmaster will pull the car out of that train.

# Hazmat Circumstances without required documentation

If there is an annotation on the train make-up document from the Conrail Shared Assets TRIMS computer "that a hazmat waybill is needed or required", then Mt. Laurel will notify the Yardmaster by phone "to remove the hazmat car from the train".

Then, Mt. Laurel will perform the research to secure the Hazmat waybill. After accomplishing this research, this hazmat car will be allowed to move at a later time. Mt. Laurel presumably will notify the Yardmaster **by phone** or by email that the documentation has been completed.

<sup>10</sup> CRCX presumably does not dispatch trains for its owners.

# Condition where the T-code Car owner is not equal to train owner

- 1) Mt. Laurel will follow-up and obtain the waybill for the cars in the other owners' train.
- 2) These waybills will be faxed to the train owner.
- 3) The train owner will contact the car owner (by **phone**, by **fax** or by email) to develop resolution to expedite handling.

These conditions seem to cover a circumstance where the train may have been dispatched from the yard to a train owner, with one or more cars not t-coded for that train owner (example is a CSXT train with an NS t-code car in the consist)

By June 2000, CRCX reports that the number of "hold" and "no bill" cars was reduced to approximately 2 percent of the total cars that were identified in the track profiles and in the advanced consist reports. As an incentive measure, CRCX now charges a daily penalty for CSXT and/or NS cars found to be either "hold" or "no bill".

This announced policy validates the FRA conclusion, documented in the December bi-annual report, that **information systems of the acquiring railroads and Conrail are not yet fully integrated, even after fifty weeks of operation**. The above policy is a manual "work around" to account for the fact that paperwork (often transmitted electronically) is not being matched to physical car movements out of the Shared Assets areas.

#### 2. Recent NS IT Actions

In addition, NS has taken the following actions:

- A weekly "no-bill" report is provided to NS by CRCX
- Shippers continually releasing cars without proper documents will be assessed a \$158 "no-bill" charge by NS

A June 14, 2000, presentation to the Merrill Lynch Global Transportation Conference by Henry C. Wolf, Vice Chairman and Chief Financial Officer of NS, is another indication that NS has recognized these issues as an IT problem. The following comments are excerpted from Mr. Wolf's speech.

"Notwithstanding extensive planning by more than 140 teams and the investment of tens of millions of dollars in consulting services over a period of nearly 24 months...we experienced significant operating difficulties ...with 1) information systems; 2) crew call and crew availability; 3) clerical processing; and 4) an operating plan that was not precisely tailored to the traffic that had to be handled. Collectively, these problems resulted in service disruptions that triggered traffic and revenue diversions and necessitated significant costs to restore rail operations."

These are the conclusions reached in FRA's second bi-annual report. FRA also has found that these difficulties caused failures to properly document hazmat movements, a violation of FRA regulations. While FRA is pleased to see recognition of the problem by NS, a permanent solution will probably not be achieved until changes are made to both the CRCX TRIMS system and NS' billing and tracking systems.

# D. Re-crew, Crew Training, and Crew Hiring Issues

Problems with "outlawed" crews (crews exceeding their allowed hours of service) continued into year 2000, at specific terminals. However, training programs now in place on both CSXT and NS have reduced the severity of the problems. Further, as operational issues are addressed and crew pools stabilize the problems of crew shortages and crew qualifications have been addressed.

Data reported weekly by both railroads show that some locations are continuing to have crew related delays into week 52. The data graphs in Appendix A identify these patterns.

## E. Accidents and Run-Away Train Issues

#### 1. Norfolk Southern

NS has introduced new operating procedures to prevent runaway trains on Keating Summit. To date, 20 engineers, 19 conductors, and 11 operating employees in helper service have been instructed in the new procedures. One cause of the problems during the winter months was the limited seniority of employees (average of less than five years); more senior employees in the Buffalo crew pool took employment with CSXT.

In developing the new operating procedures, 33 tests were performed with regional and divisional road foremen of engines, using train consists of between 5,800 tons and 14,000 tons. The new procedures call for:

- A running test of the dynamic brake prior to reaching Keating Summit
- More careful matching of locomotive power to consist
- Special procedures for inclement weather
- Special instructions for applying hand brakes and/or retainers when trains are stopped or descending the grade.

## 2. CSXT (Bloomington, MD)

The CSXT runaway at Bloomington was aggravated by a burned-out MU cable, causing the engineer to fail to realize that he had no dynamic brake available except on the lead unit.

Several actions have been taken to address problems on this grade:

- Speed has been reduced from 25 m.p.h. to 20 m.p.h. as of February 2, 2000
- · Test of multiple unit capability now must be performed by crews before descending the grade.
- A new road foreman position has been established for this crew district.

Lack of experience was not reported as a factor in the Bloomington incident. Both crewmen had many years of experience on that specific crew district. This incident is still under investigation by the FRA and the National Transportation Safety Board (STB).

# F. Issues of Locomotive Inspections at Remote Locations

The Calendar Day Inspection Process (CDI) team has completed and is tracking compliance with CDIs at all CSXT locations except Selkirk, NY, and Avon, IN. An organizational meeting was held at Avon on April 18, 2000. Selkirk was also accomplished by mid-May. Approximately 85% compliance has been achieved at both locations.

The next area of concern for FRA is that increased inspection compliance has resulted in more reported defects, and CSXT is not making repairs in a timely fashion. FRA will follow up at the locomotive shops to ensure that the original issues found during the audit of CSXT have not returned as problems.

# G. Reduction of Workforce

NS has provided FRA with a list of major work force productions since split date. These include both hourly and salaried employees. NS has stated that these reductions were unrelated to the Conrail acquisition, and has cited general business conditions. FRA questions whether the service disruptions following the Conrail acquisition and high fuel costs might have also been a factor.

Time Frame	Employment Category	# of Workers	Notes
1. Agreement Employees			
Nov Dec. 1999	Maint. of Way	300	Furlough at end of work season; workers not recalled in 2000
Feb. 20, 2000	Maint. of Way	550	Positions eliminated systemwide
April 7, 2000	Mechanical	450	48 workers recalled at Hollidaysburg for insourcing contract
June 2, 2000	Mechanical	214	Jobs abolished as of 8/4/2000
2. Non-Agreement			
March 1, 2000	Supervisory	919	Voluntary early retirement
Totals		2,433	

#### **Table 2: Workforce Reductions by NS Since Split Date**

NS also informed local FRA inspectors that there had been some reductions in their police forces due to the recent employee buyouts. In the Cincinnati area, the available force went from 8 to 4 officers while Columbus went from 7 to 3 officers and Cleveland went from 7 to 4 officers.

Late in 1999 CSXT offered a buyout program to its supervisors and it has been reported that they were successful in reducing the workforce by some 800 supervisors. NS also accelerated early retirement provisions in February for a "voluntary early retirement window" for non-agreement employees. NS recently announced that 916 of its employees elected to participate in the program. FRA is concerned from a safety perspective that the institutional knowledge of particularly operating/transportation department supervisors may be departing the two railroads. This safety concern was also addressed with both railroads at the March/April SIPA/Safety review meetings.

# **H. CSXT Reorganization**

On April 15, 2000, CSXT announced that three senior officers were departing the company:

- Ronald Conway, President
- John Sammon, Senior Vice President, Marketing
- Gary Spiegel, Senior Vice President, Operations

CSX Chairman John Snow announced that he will assume the presidency of the railroad in addition to his other titles, and promised early improvement in operating and financial performance.

# I. Capital Investments by CSXT, NS and CRCX Prior to and After the Conrail Acquisition

A continuing concern of FRA is whether the two acquiring railroads, having spent \$10.8 billion to buy Conrail, will have sufficient resources to continue an adequate program of capital investments. The recent declines in stock prices of both railroads reinforce this concern. As of June 2000, the combined market valuation of the two railroads is less than the price they together paid for Conrail. NS has recently traded in the range of \$15 per share, versus a high of \$39 in 1998. CSXT has fared even worse, trading recently at \$20 per share versus a high of close to \$60 in 1997.

Figure 6a shows capital spending by NS and CSXT from 1997 through 1999, with a projection of planned expenditures for the year 2000. The totals for each year include all planned capital for equipment, track and plant expenditures, and other items.

Figure 6a: Capital Spending by NS and CSXT 1997 through 2000



Figure 6b: Capital Spending by CRCX 1997 through 2000



Both CSXT and NS have reduced capital spending for the year 2000. Note, however, that CSXT is a larger railroad than NS, so capital needs might be expected to be greater. Also, many capital investments are cyclical and long-lived. This four-year time series may have found CSXT in a "catch-up" mode, while NS, having made large expenditures in the past, is in a period where needs are not so great. Even so, the decline in capital expenditures in 2000 is a matter of some concern. NS' reduction from \$929 million in 1997 (for a railroad not including the 58% of Conrail purchased in 1998) to a projected \$747 million in 2000 for the much larger system including the Conrail purchase, does raise questions about the long-term impacts of such reduced spending.

Conrail's own capital program for 1998 totaled about \$300 million, and this represented a significant cut from prior years. NS pledged to continue CR spending at current levels June to December 1999. However, the 2000 capital program for CSXT, NS and CRCX represents a significant reduction from the levels of previous years. Already, some capital projects have been deferred, notably the replacement of Bridge 361.66 on the Southern Tier Line, the repair of the Brandywine River bridge on the Shellpot Secondary, and the removal of NS trackage from 19<sup>th</sup> Street in Erie, PA, and its relocation to the CSXT right-of-way.

CSXT capital spending program for 1999 was \$1.4 billion, covering both CSXT and the 42% of Conrail acquired in 1998. However, only \$460 million of this amount was for track and structures. CSXT spent about \$1.1 billion on capital investments of all types in 1997.

CRCX's capital program (Figure 6b) was \$28 million in 1999, reflecting large integration expenses for signals, yards, DATS work and engineering equipment. Total capital expenses for year 2000 is expected to be only about \$16 million, which is about 14 percent below the 1997 level for the identical areas now under CRCX operation.

# VI. Metropolitan and Highway/Railroad Crossing Issues

Changes in traffic patterns resulting from the breakup of Conrail focused the attention of the acquiring railroads, the STB, the FRA, and local officials on several critical metropolitan areas. These included:

- The Cleveland terminal area
- The Buffalo terminal area
- · Chicago terminals and interchange with Western railroads

As noted earlier, FRA teams were established to monitor each of these areas. Each of the three teams is now headed by a Railroad Project Manager, whose job is to coordinate efforts of regional offices with those of FRA in Washington. Safety monitoring continues at *a* high level.

As a condition of the approval of the CR purchase, NS and CSXT agreed to a number of specific actions ("Appendix Q items") required by the Surface Transportation Board, and also agreed to undertake various measures to mitigate impacts of increased train frequency in specific areas.

# A. Status of STB Imposed Appendix Q Items

The STB Appendix Q conditions dealt with the environmental and safety consequences of changes in the volumes of train traffic, and required actions ranging from warning signs at grade crossings, through improvements to crossing protection, to measures to reduce noise on rail tracks and requirements that specific outreach programs to local emergency management agencies be undertaken. The two acquiring carriers and CRCX are required to make periodic reports on their progress in complying with these Appendix Q requirements.

In addition, the acquiring carriers have made a number of investments, and changes to operating patterns, in the Cleveland, Buffalo, and Chicago terminals. Some of these have come as the result of local community concerns or regulatory requirements, and some have been made to address operating problems.

The following section addresses Appendix Q issues, as well as actions taken in each of three critical terminal areas.

#### 1. CSXT Transportation Appendix Q Actions

The STB required a number of actions by CSXT to mitigate the impacts of increased rail traffic on local communities. These included:

- 1. Signage at grade crossings
- 2. Certification of compliance with FRA/AAR hazardous materials regulations
- Liaison with local emergency response organizations, development of local HAZMAT response plans, assignment of toll-free phone numbers

The above items are complete, as are virtually all of the rail/highway crossing upgrades promised at 51 grade crossings in IL, IN, and OH. Specific agreements were executed with a number of towns and cities in these states, involving grade crossing closures, grade separations, crossing improvements, and information systems for emergency management agencies showing train locations. All of these projects have been completed.

CSXT has pledged an ongoing effort to mitigate rail noise by increasing the use of welded rail and investigating curve lubrication techniques. These efforts are ongoing. Rail lubricators have been installed on curves on the Shortline in Cleveland.

#### 2. Norfolk Southern Appendix Q Actions

Due to the large increase in traffic projected for NS' former "Nickel Plate" line in Ohio and Indiana, grade crossing improvements were required by the STB on 23 line segments. This work is largely complete (in some cases, STB directives have been superseded by specific local agreements).

NS was also mandated to work with localities on mitigation of the impacts of increased rail traffic, especially on emergency services. This work is largely complete. All STB conditions related to

hazardous materials (by NS) are reported "completed". NS is also reporting the volume of hazmat traffic it carries, to the affected local communities.

The relocation of the NS main line in Erie, PA, from the middle of 19th Street to a viaduct that will be shared with CSXT is reported to be delayed.

Discussions are continuing with states and localities over specific noise abatement measures to be taken by NS.

#### 3. CRCX Appendix Q Actions

CRCX operates in densely populated areas of MI, NJ, and PA. The STB Appendix Q conditions imposed on CRCX involved principally the improvement of grade crossing safety and the strengthening of hazardous materials response plans. These efforts were completed by mid-1999, except for ongoing efforts to reduce rail noise, which should be completed by August 2000.

## **B** Cleveland Issues

Entering the month of June 2000, two continuing issues in the Cleveland, Ohio area were 1) train noise, and to a lesser extent, 2) blocked crossings. The blocked crossing issues exist in the area west of NS mainline milepost 181 and the town of Olmstead Falls, OH. The Olmstead Falls issue is being addressed through open lines of communication between the Chief of Police and the NS managers.

In Cleveland, the proposed Cloggsville, OH connection has been opened on the south end and this connection is now used by about 7 NS trains per day. The north end of the connection is to be completed in July 2000. This new NS connection should help reduce highway congestion in the Cleveland suburbs.

Temporarily (into the month of June 2000), about 7 CSXT trains are being diverted to the NS route due to the upgrade work of ABS (automatic block signal) territory to TCS territory and the lack of electric lock switches at milepost 19.5. When the locks are installed those CSXT trains will return to their normal routings.

NS has shifted a crew-change location from Berea, OH (west of Cleveland) to CP-190 to eliminate blocked crossings during crew changes. Also, at Flyria trains no longer must stop to pick up or set off. NS has issued a Bulletin Notice to train crews to reduce blocked crossings, cutting crossings if necessary to open them. There has also been an increased emphasis on timing crew changes so as to reduce time stopped.

Hazardous material issues Continue to be monitored by FRA. FRA's monitoring of Cleveland has identified that the additional training provided by CSX and NS in the Information Technology areas has significantly reduced non-complying conditions involving hazardous material shipments. FRA now finds only occasional isolated HM increases. Also, NS provided a table top drill to Cleveland area emergency respondees on May 19, 2000.

# C. Buffalo Issues

Shippers are still noting service problems for cars originating, terminating and interchanging in the Buffalo, NY area. As a consequence, STB has ordered additional meetings with shippers, with a report due back in late September.

FRA notes that terminal operations and interchange between CSXT and NS is still a concern as hazardous materials shipments are delayed. NS states that it no longer has misrouted or "ping-pong" cars in the Buffalo area. FRA will continue to monitor conditions.

CSXT crew management issues in the Buffalo, NY area have significantly declined with only isolated problems now reported by the crews. Resolution of crew management issues has contributed to the improved flow of traffic moving through the Buffalo terminal.

A major continuing concern in the Buffalo area involves the quality of locomotive inspections, with locomotives being given to crews with non-complying FRA safety conditions. These concerns were recently addressed in a meeting between CSXT and FRA and both short term and long term fixes have been proposed.

Other ongoing safety concerns involve the use of "Information Technology" in the transportation of hazardous material cars. Specific problems being monitored by FRA and addressed by CSX Transportation involve "turn-around" trains and trains picking up en route to Buffalo, NY. FRA also reports that both NS and CSXT, as of May 2000, were still struggling with their ability to consistently marry hazardous materials cars with their required transportation documents in the Buffalo area (June 2000).

Buffalo was also the site of one of four "listening post" meetings sponsored by FRA with participation of members of the B&LE and the UTU. Similar "listening Posts" were held between January and June at Dearborn. MI, Newark, NJ and Binghamton, NY.

## **D.** Chicago Gateway Issues

The Chicago Gateway is where much of the interchange from former Conrail lines to Western connections occurs. St. Louis, of course, is also an interchange point, and CSXT interchanges with Canadian National Illinois Central at Effingham, IL and with Union Pacific at St. Elmo, IL. NS has a very large traffic interchange with all of the western carriers at Kansas City, and also at the St Louis gateway. NS also interchanges with the UP at Salem IL and with the Canadian National Illinois Central (CNIC) at Tolono IL. However, Chicago remains the largest interchange with Western roads for both CSXT and NS.

Both railroads had terminal facilities in Chicago prior to the Conrail takeover. NS' principal freight yard was Calumet Yard, on the far south side of Chicago. Intermodal traffic was handled at the former Wabash yard in Landers, reached by a route that crossed two other major rail lines at grade. CSXT's Bedford Park intermodal facility is adjacent to the Belt Railway of Chicago Clearing Yard, and is reached by B&O Chicago Terminal (BOCT) trackage that also affords access to BNSF's Congress Park Yard, UP's Proviso, and Soo Line's Bensenville Yard.

Acquisition of Conrail gave both NS and CSXT an opportunity to improve their terminal operations in Chicago. CSXT gained multiple routes into Chicago with its acquisition of trackage rights on a temporary basis over the former NYC Conrail line and its significant upgrading of the former B&O line west of Willard OH. CSXT also built a new intermodal terminal at 59th Street.

CSXT Chicago congestion peaked in the fall and winter of 1999 -- 2000, and with a shifting of some traffic classification functions to other support yards, CSXT Chicago dwell time has been less than 21 hours on weekly average into June of 2000.

NS dwell times were monitored by FRA using Elkhart Yard 100 miles to the east of Chicago as the benchmark point. NS dwell at the former Conrail Elkhart Yard (the gateway to Chicago) fell to just 25 hours per car during Week 43. NS uses 25 hours as its system goal. However, in subsequent weeks, including week 52 (June 2000), dwell time has varied around an average closer to 29 hours. The crew delay situation for NS Chicago has improved from a rate of 50% in the spring to approximately 30% in Week 52 (Appendix A, Figure 24).

# E. Toledo and Northwest Ohio Issues

Highway grade crossing congestion occurred in the third quarter of 1999 in this part of Ohio, By early June the amount of highway traffic delay had dropped and the number of complaints registered with the FRA also declined. Nevertheless, the increase in post split crossing delays here and in other former Conrail states like Pennsylvania, demonstrates that this issue needs to be examined more closely in any future large merger case.

A hand throw switch was made operational in June 2000 allowing the connection of the former Conrail main line (now NS operated under lease) to the Toledo Belt. This connection includes 3,000 feet of new track. The new route makes the connection makes the former "Maumce Connection track" redundant in the Conrail post split era. The manual connection is under the authority of the NS Chicago Line Dispatcher. The Toledo Belt Route is controlled by the Ironville Tower.

# F. Passenger Train Issues and Network Congestion

In mid-June 2000, Amtrak passengers were warned that all 26 trains Amtrak runs over CSX may experience "unavoidable delays" over the next few months because of congestion and summer track maintenance. In all, 115,000 passengers per month may be affected. Similar posters were circulated last year to warn passengers of delays that might be encountered while on Norfolk Southern trackage. However, Amtrak reports no serious problems exist this spring/summer period on NS lines

# G. Clearance Issues and Doublestack Relief for I-95 Corridor

Neither the CSXT route from New York to Washington, DC nor Amtrak's Northeast Corridor has sufficient clearances for unrestricted double-stack train operation. Amtrak and NS are negotiating over the cost of raising catenary wire or lowering track, or both, to provide double-stack access from Perryville, MD (junction with NS' Port Road) to Baltimore ocean terminals.

CSXT has clearance constraints in Philadelphia, Baltimore, and Washington.

## H. Selected Rail/Highway Crossing Delay Issues

In a review of highway incidents involving blocked crossings, FRA determined in late March that this issue involving congestion on the rail routes required specific study. Due to the extensive nature and severity of the grade crossing blockages which have occurred at both CSXT and NS highway crossings over several months, it is evident that more stringent review of means to mitigate such occurrences and/or alternative strategies need to be accomplished for future mergers. Extended periods of highway blockage by delayed, slow, or even completely stopped trains have been common, particularly in parts of Ohio, Pennsylvania and Delaware.

There was an isolated report during April that the City of Toledo had placed a train crossing blockage time limit sign (with report phone number) in such a position as to physically block the view of active flashers by approaching motorists at a protected crossing. The city later agreed to move the signs so that the view of the warning signals was no longer blocked.

CSXT has plans for an extensive grade separation project at the west end of Willard Yard in central Ohio. When completed, the new overhead bridge (now under construction) will eliminate a public crossing that presently requires local residents to cross four CSXT tracks. Because of the high number of trains operating through the area, this new overhead bridge will do much to relieve traffic congestion on this road. Crossing at Section Line 30 Road is closed and the overpass is complete and open to traffic. In addition, the underpass project for Randolph Street in Garrett, Indiana is complete.

# VII. FRA's Overall Safety Assessment Conclusions & Recommendations

The three railroads (NS, CSXT, and CRCX) have achieved a laudable safety record since June 1, 1999, despite operational difficulties lasting for many months. This achievement is reflected in their closure of nearly all identified safety and training issues identified in the SIPAs.

FRA's conclusion is that as of June 2000, both CSXT and NS are now showing statistical patterns of sustainable progress towards recovery to pre-split Conrail service.

However, entering the month of June 2000, a few safety related issues remain such as excessive dwell time of cars in major yards and long delays of trains for crews. The delays or cycle times for tank cars and the commodities that they carry are still of particular safety concern to the FRA. The overall accuracy rate of HAZMAT documentation is, in general, poorer than

# Conrail's record in the year preceding June 1, 1999. These problems continue to linger despite strong efforts by the carriers to take corrective actions.

As of June 1<sup>st</sup>, the average days on line for tank cars (half of which 50% contain hazardous materials) on NS remains at 6 days versus 5.5 in June of 1999 (figure 7). On CSXT, average days on line for tank cars remains above 7 days versus approximately 5.6 in June of 1999 (figure 8).







Track inspection, maintenance and repair procedures were another matter of concern. In April of 2000, CSXT and the FRA entered into an agreement to improve the practices in these areas.

While excessive crew hours that plagued both railroads in 1999 are largely past, the problem of crew training continued to exist at specific locations as evidenced by runaway trains on NS' Keating Summit in Pennsylvania during January and February and the incident on CSXT in January. New training procedures were implemented at these locations to prevent further occurrences.

## Short Term IT/HAZMAT Recommendations

 CSXT and NS should consider treating CRCX as a separate carrier for the purpose of interchanging cars. This will address a number of problems resulting from the so-called "soft interchange" process now used

Action: Although some revised procedures have been instituted by NS and CSXT, some of the basic problems and data system incompatibilities remain entering the second year.

Senior supervising clerks and yardmasters, on all CRCX work shifts, must be trained to use NS TYES and CSXT systems

Action: Training has been completed.

A standard procedure should be used to manually check cars without proper identification of contents, origin, or destination

Action: New Joint Improvement Process has created such a process check.

Exception reports should automatically be generated and then checked against each of the carrier records, if not for all cars, then for hazardous material "capable" cars or shipper patterns

Action: CRCX now provides a "no-bill" report to NS and CSXT for hazmat cars.

#### Long Term IT/HAZMAT Recommendations:

In future mergers, proposed post-merger systems must be tested against more complete samples of data, and in an environment more closely resembling "live" transactions. Tests carried out by NS and CSXT often involved data samples too small to permit an accurate judgment of accuracy rates

Action: To date, no new mergers of major proportions have been approved or have occurred. NS and CSXT believe that their testing prior to split date was adequate.

Training in any new systems should be completed prior to cutover. Training must include field personnel as well as train and engine crews

Action: NS and CSXT have implemented training plans.

 NS and CSXT IT system rollouts should be accelerated where possible to complete no later than mid-2000

Action: NS TYES rollout will not be completed until November 2000. CSXT completed the rollout of its yard management system in the spring of 2000. A new train dispatching system is now being installed across the expanded CSXT system with completion targeted for the fall of 2000.

A goal should be to eliminate former Conrail data systems, and migrate to either NS or CSXT systems

Action: CRCX has improved its IT access training and has met with both NS and CSXT personnel to improve systems information flow and control procedures when HM commodities are in the movement. Full report given to FRA at June SIPA meetings

## **Operational Recommendations:**

- Based upon performance problems of the three railroads in this merger, a more intensive review of the interface between the IT systems and operating personnel should be required for future merger filings. The objective should be identification of potential Information Technology Integration and HAZMAT documentation problems. Identification of preventive measures should be done prior to the implementation of a railroad merger.
- Advanced safety training of supervisory and operating personnel at common or allocated terminals, to ensure adequate staffing and knowledge of, and compliance with, FRA regulations, as well as the carryover of institutional knowledge;
- It is evident, based upon the merger performance of the three railroads (NS, CSXT and CRCX), that a more intensive review of proposed crew assignments and crew training needs to be performed prior to merger initiation, to ensure that sufficient crews are trained and available to operate rail service as proposed by the merging railroads.
- Based on the occurrence of runaway trains at both NS and CSXT locations shortly after the split, a <u>more intensive review</u> of operating locations (choke points, grades, etc.) is needed prior to implementation of operations in future large mergers.
- Based on the safety concerns continuing over the last seven months, FRA believes that the documented service performance problems have affected the safety performance of all three railroads. All three railroads (NS, CSXT, and CRCX) should continue to focus upon reduction of dwell times for loaded HAZMAT cars.
- Provisions for pre-merger gathering of baseline safety statistics should be a part of each merger applicant's SIPA in order to be able to compare with post merger territories.

FRA will continue its close surveillance of the merger safety integration during 2000 and 2001 (and longer, if required). Selected safety related operating problems are continuing into the thirteenth month of Conrail split and integration, and FRA continues to monitor their effects on safety and service.

# Appendix A

Safety and Operations Data Conrail Integration Trends as of Week 52 (end of May 2000)

# Figure 1 Injury Rate as Incidents per 200,000 Hours Worked



Date from CRCX SIP Exhibits



Frequency is per 200,000 hours worked

# Figure 3: Norfolk Southern Railway Divisional Safety Performance --12 Months 1999



Casualties per 200,000 hours worked: data from NS

# Figure 4: Norfolk Southern FRA Injury Rate per 200,000 Hours Worked



**Jan-June Period in Each Year** 

# Figure 5: Norfolk Southern Railway Hazmat Incidents per 10,000 Loads

(Full year, except Year 2000 is through April)



Data from Norfolk Southern Railway

(Yr 2000 is Jan - April only)

# Safety Trends Figure 6 Days on NS Lines for Loaded Cars









All figures produced from analysis of NS and CSXT Web site reports to the STB, unless otherwise noted






# Figure 12 N. Jersey CR Shared Asset Area

North Jersey Cars On-Hand











# Figure 17 % Detroit Trains Originating More Than 6 Hours Late

%



# Performance Trends Figure 18 % N. Jersey Trains Originating More Than 6 Hours Late



Late June to May 26

(No weekend days plotted)

%

# Performance Trends Figure 19 % S. Jersey Trains Originating More Than 6 Hours Late



Late June to May 26

%

(No weekend days)





# Figure 22 NS Dwell Hours/Car at Key Former CR Terminals

NS System GOAL: 25 hours





# Figure 24: % of NS Crews Delayed per Week



#### Figure 25: % of CSXT Crews Delayed per Week



# Performance TrendsFigure 26: # of NS Crews Delayed per Week

(Based on a crew being delayed two hours or more after coming on duty at that yard)



## Figure 27: # of CSXT Crews Delayed per Week

(Based on a crew being delayed two hours or more after coming on duty at that yard)



# Figure 28

Hours of Delay for the Week in the Shared Asset Areas



Week 52

## **Summary Comments**

May 26, 2000

- The Detroit Shared Assets Area dwell time is near day one base; late departures improved only at Detroit
- Dwell times significantly improved in the New Jersey Shared Asset Areas; but late departures are a problem
- Avg. days on line for loaded tank cars (incl. Hazmats) remains high but is now declining for CSXT; NS improvement slows
- CSXT Avg. velocity is below
  18 mph; while NS drops
  from recent high

Important data still NOT available, are the prechange Conrail baselines

Shippers informed in FEB that NS and CSXT management 'standards' for most reported data items will probably not equal old Conrail

"No bill" cars on CSXT recently dropped below 7% IT Paper review completed with railroads