THE LOCOMOTIVE
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NEWSLETTER • JANUARY 2000

BLE says no to NMB request

'We cannot agree to engage in voluntary discussions with the UTU'

In a decision that could significantly impact the future of the BLE and all operating crafts in the railroad industry, the National Mediation Board on December 30 announced it would not rule on the UTU's allegation that a representation dispute exists on the Union Pacific Railroad.

Instead, the Board announced that the dispute would be settled by a three-member panel of "labor relations professionals," and that a decision would be announced no later than March 1. Profiles of Arnold M. Zack, Richard I. Bloch and Richard R. Kasher appear on page 7 of this issue.

In addition, the NMB suggested that the BLE and UTU resume "voluntary discussions to resolve this dispute through mutual agreement."

BLE International President Ed Dubroski, however, declined the request in a January 10 letter to the NMB.

"After careful thought and consideration, the BLE cannot agree to engage in voluntary discussions with the UTU under the auspices of a neutral facilitator."

President Dubroski explained why the BLE declined the NMB suggestion in a January 10 letter to all BLE members.

"For as long as I can remember, the philosophies, policies and goals of the BLE and the UTU have been very different.... and usually contradictory," Dubroski wrote. "That is more true today than at any time in years.

"Top UTU leaders have engaged in a systematic two-year assault on the BLE... I doubt whether even a brief, civil conversation is possible at this point, much less the serious, substantial discourse suggested by the Board.

"It is clear to me that, ultimately, there isn't even a remote chance of reaching a mutual agreement as contemplated by the Board that would be acceptable to the majority of BLE members. I say this in all candor.

"No matter which way the NMB-appointed panel rules, the BLE will be tested in a way it has not seen since its earliest days. I will measure up to the challenge, and I know you will, too. With your support and sacrifice, and by working hard together, we will prevail."

On Jan. 12, 1998, the UTU filed an application with the Board asking that the crafts of locomotive engineer, conductor, trainman, brakeman, switchman, hostler, fireman, and hostler-helper be eliminated and combined into a single craft. UTU also asked that the Board sanction a representation election to see which union would represent the proposed new craft.

"The line between the craft or class of engineers on the one hand, and conductors and trainmen on the other, has been blurred to the point of practical extinction," the UTU's application states. "Consequently, the Board should now find that a single operating craft or class of 'Train and Engine Service Employees' now exists, industry-wide."

On July 1, 1999, the AFL-CIO imposed sanctions against the UTU because of its application to the NMB, making all UTU members subject to organizing efforts from other unions.

An impartial AFL-CIO umpire has ruled that UTU's NMB application is nothing more than a raid on the BLE, and on July 2, AFL-CIO President John Sweeney took the unprecendented step of formally asking the Board to dismiss the UTU's petition. •

Membership skyrockets

Directing a Town Hall Meeting in North Platte, Neb., is Vice-President Ed Rodzwicz. As a result of these meetings, the BLE has gained over 1,000 new members from September through November.

The Brotherhood of Locomotive Engineers has gained over 1,300 new members in four months by holding a string of successful "Town Hall" meetings across the Union Pacific property.

The purpose of these meetings is to educate BLE and UTU members regarding the UTU's application before the National Mediation Board and the resulting negative ramifications it would have on the industry.

"Once UTU members in the field hear the truth and understand how their international has put their futures in jeopardy, they come over to the BLE's side of the fence," said International Vice-President Ed Rodzwicz, who is the lead organizer of the BLE's UP campaign.

In North Platte, Neb., the BLE gained 17 new members as a result of a Town Hall meeting. International Vice-President Will-

See **Town Hall Meetings**, Page 6

Four rail brotherhoods commit to solidarity

On December 6 and 7, 1999, four transportation unions met to discuss issues and methods to improve the working and living conditions of their memberships. The Brotherhood of Locomotive Engineers (BLE), the Transport Workers Union (TWU), the Brotherhood of Maintenance of Way Employes (BMWE) and the American Train Dispatchers (ATDD) made specific commitments to work together collectively for such improvements and develop an ever closer relationship.

"These issues are the building blocks to a new alliance that will unite Railroad workers with other Transpor-

See **Solidarity**, Page 6

BLE issues in-depth report on positive train control

With an eye toward the future, and in a continued effort to protect the safety of all operating employees, the Brotherhood of Locomotive Engineers co-authored an in-depth report submitted to the FRA's Rail Safety Advisory Committee regarding the benefits and potential dangers of Positive Train Control (PTC).

The principal author was Dr. Tom B. Sheridan, professor at the Massachusetts Institute of Technology. Dr. Sheridan is a well-respected authority in the field of human factors and automation. BLE Members Dr. Frederick C. Gamst (BLE Div. 660), a University of Massachusetts professor and world renown expert on railroad operations, and Bob Harvey (BLE Regulatory Research Coordinator, D.C. Office) worked assiduously on the final draft to make sure the paper addressed safety concerns and to ensure PTC systems will be the safest possible.

See **Positive Train Control**, Page 4

LEGISLATIVE UPDATE

Legislation would stop locomotives from operating in reverse

Brother Norm Hendrickson, Pennsylvania State Legislative Board Chairman, and members of the BLE Pennsylvania State Legislative Board, have been successful in having legislation introduced in the Pennsylvania legislature that would prohibit railroads from operating locomotives in the reverse position. Currently, there are 22 cosponsors to House Bill 2060 and Brother Hendrickson reports that this bill is expected to pass.

State Representative Veon (D) introduced the legislation citing an article in the May 1998 issue of The Locomotive Engineer Newsletter which stated operating locomotives in reverse contributed to a fatal collision in Indiana that year. •

Staff changes at FRA

Several senior staff positions have changed at the Federal Railroad Administration recently. Deputy Administrator Don Itzkoff left the agency to join a Washington, DC law firm. Jim McQueen, Associate Administrator for Railroad Development, left the FRA to become a consultant. Norma Krayem, Senior Advisor to Administrator Molitoris, left to become Deputy Chief of Staff in the DOT Secretary's office.

The BLE is supporting Jack Wells for the FRA Deputy Administrator's position. Wells is currently senior staff to Congressman Oberstar (D-MN) on the House Transportation & Infrastructure Committee. •

SOFA Working Group studies switching operations, safety

At the request of the FRA, the Switching Operations Fatalities Analysis (SOFA) Working Group was formed in February 1998 to review recent fatal incidents and to develop recommendations for reducing fatalities in switching operations.

The Working Group developed a codified database of standardized information from the information contained in files of 76 FRA fatal accident cases which occurred between January 1992 and July 1998.

Following its review, the Working Group found that the occurrence of fatalities in switching yards has not decreased over the period under investigation and remains a serious problem. Fatalities are not often the result of a single precipitating cause but instead, are usually the result of three or four contributing factors. Review of the data led to five recommendations for safety of switching operations.

1. Extra precaution when fouling track or equipment, adjusting knuckles or drawbars or applying or removing an EOT device.

2. Extra precaution when two or more crews simultaneously perform work in the same yard or industry tracks.

3. Job safety briefings at the beginning of each tour of duty, and additionally as required.

4. Extra precaution when using radio communication and hand signals to control train or engine movements. (A combination of radio and hand signals is prohibited).

5. Special attention for crew members with less than one year of service.

The Working Group included representatives from the FRA, AAR, ASLRRA, BLE and UTU. Representing BLE were Brothers George Last, SLBC-CO; Tom Perkovich, SLBC-MN; and Raymond Holmes, SLBC-TX.

We extend our appreciation and thanks to these Brothers for all of their hard work on this project. •

Two-person crew law upheld in Wisconsin

The U.S. Court of Appeals for the 7th Circuit found that Wisconsin's two-person crew law is preempted for two types of rail operations — hostling and helper operations — because of FRA regulation of these areas.

However, the Appeals Court did not change the central finding that the Wisconsin two-person crew requirement is not federally preempted for over-the-road operations because FRA has not acted with regard to this area. •

BLE, Steelworkers protest use of non-union rails by BART

Brother Tim Smith, California State Legislative Board Chairman, advises that the San Francisco County Board of Supervisors adopted a resolution urging Bay Area Rapid Transit (BART) to stop buying rails manufactured by Oregon Steel, citing serious quality problems because of inexperienced, nonunion replacement workers. (Oregon Steel was formerly known as Colorado Fuel & Iron, Pueblo, Colo. They changed their name to allow it to break their contracts with the union.)

BART is currently using Oregon Steel rails on an expansion project. The Colorado Company illegally replaced 1,100 Steelworkers in 1997. The NLRB has charged the company with more than 100 violations of labor law and OSHA has levied fines for 61 health and safety violations. This company is on the AFL-CIO's "Do Not Buy" list.

Earlier this year, BLE informed the Steelworkers that we totally support their strike and that we would urge our members in the Omaha area to join in their protest at UPRR's headquarters against UP's purchase of steel rails from Oregon Steel. •

Bombardier develops high-speed locomotive

A $7 million FRA contract was awarded to Bombardier, Inc. to develop a locomotive that can travel at high speeds without the need for costly electrification of rail lines. The locomotive will use a gas turbine engine connected to a generator to deliver power to four independent motors, which will propel the train up to 150 mph.

The prototype, scheduled for delivery in one year, would be designed initially for passenger service. •

Three rail safety bills currently pending before Congress

Now there are three rail safety bills pending before Congress: H.R. 2450, introduced by Congressman Oberstar (D-MN) (reviewed in the June/July 1999 issue of the Newsletter); H.R. 2638/S.1496, the Administration's bill; and H.R. 2666, rail labor's safety bill.

The Administration's bill (H.R. 2638/S. 1496) will reinstate rail safety user fees; expand Hours of Service Act coverage to signal contractor employees and employees engaged in dual service; increase the amount of punitive damages; expand employee "whistleblower" protections; allow FRA to monitor radio communications; and require Class I and II railroads to file fatigue management plans with FRA (and would require Class III's to file fatigue management plans with FRA if they operate on Class I tracks). In addition, the bill would promote a "1-800" notification system for grade crossing problems, develop suggested model state laws regarding grade crossing signal violations, and mandate reporting and updates to FRA's national grade crossing inventory.

Rail labor's safety bill (H.R. 2666), introduced by Congressmen Shows (D-MS) and Lampson (D-TX), will require FRA certification of carmen, conductors, dispatchers, locomotive engineers, power directors and trainmen. The bill expands Hours of Service Act coverage to signal contractor employees, employees engaged in dual service and power directors; expand employee "whistleblower" protection; require fatigue management plans approved by FRA for Class I and II railroads; allows FRA monitoring of radio communications, etc.

At this time, no hearings have been scheduled on any of the three pending rail safety bills. •

Commercial truck drivers face tougher standards from FHWA

The Federal Highway Administration has issued regulations requiring sanctions and penalties for commercial vehicle drivers who are convicted of violating laws or regulations pertaining to railroad-highway grade crossings. Effective October 4, 1999, the new regulation specifically covers convictions for six types of offenses, including failure to slow down, stop, check for clear track, and obey traffic control devices or law enforcement officials. Also included is crossing without having sufficient undercarriage clearance or sufficient space on the other side to clear the track without stopping.

The regulation applies whether the offense involves federal, state or local laws or regulations regarding railroad-highway operations. Truck drivers will lose their commercial driver's license for at least 60 days if they violate any one of the six offenses. Penalties increase to an automatic one-year revocation after the third offense within three years.

These new regulations are in response to the March 1999 accident involving Amtrak and a tractor-trailer that killed 12 people. •

Pennsylvania to spend $7 million on railroad improvement projects

Brother Norm Hendrickson, Pennsylvania State Legislative Board Chairman, reports that Pennsylvania's Transportation Secretary will release $7 million to help finance 51-rail freight improvement projects, which will help create more than 1,600 new jobs. This funding will be used for construction, maintenance, repair and rehabilitation of rail lines, sidings and grade crossings. •

New engineer certification regs effective January 7

The final rule regarding new certification regulations for locomotive engineers was published on November 5, 1999, and is the first comprehensive revision of the locomotive engineer safety regulations since they became effective in 1992.

The new rule amends the disqualification periods and provides increased opportunities for remedial training for less serious violations. It also addresses new technology by setting minimum safety standards for the operation of vehicles that may be used in lieu of traditional locomotives.

The new rule became effective January 7, and copies can be obtained from the BLE's website, or by calling, writing or e-mailing the BLE Washington D.C. Office.

The Washington Office's phone number is (202) 34707936 and their e-mail address <bledc@aol.com>. Their mailing address is: 10 G Street NE, Suite 480, Washington, DC 20002. •

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IN THE LINE OF DUTY

Yvan Theriault

MONT-ST-HILAIRE, Que. — Investigators are trying to determine the cause of a fiery crash of two Canadian National freight trains on December 30, 1999 in Mont-St.- Hilaire, Quebec. Two railroad workers were killed, including BLE member Yvan Theriault. Also killed was Conductor Paul Davis.

Brother Theriault, 47, was a member of BLE Division 558 (Charny, Quebec). He joined the BLE on September 1, 1977. He leaves behind a wife, Andree, a son Frederic and a daughter Caroline.

Funeral services were held on Saturday, January 8, at St. Nicolas, Quebec.

Theriault's and Davis' train collided with another one, setting off explosions and a fiery blaze that forced 700 people from their homes.

The fire ball sent flames shooting more than 50 metres into the air and lit up the night sky. Clouds of black smoke spewed from the blaze carrying a charred smell for kilometres. "The fire was so huge that my men couldn't get within 500 feet (150 metres)," said Gilles Dubuc, head of public security for the town.

Despite the loss of the two men, it could have been worse.

"Thank God it didn't happen within the city limits. It would have been a catastrophe and we would have had to evacuate half of the city because the railroad goes through the city."

About 13,000 people live in the community.

The two trains were travelling in opposite directions on different tracks when they met in Mont-St-Hilaire, about 50 kilometres east of Montreal. CN officials can't say what happened but they suspect one of the trains derailed and tipped over on to the other.

One man who was evacuated said he saw "a mushroom cloud in the sky. The windows in my home shook."

Mario Masse, who lives about a kilometre from the accident site, said he could feel the heat from the fire on his cheeks.

"There were three explosions and with the third explosion, we were at the window, and we could feel the heat on our faces," Masse said. "The power went out for about three or four seconds," in his home with the collision.

"We heard what sounded like a derailment or a collision. Then we saw the flames shooting out of the trains."

The same tracks are used by VIA Rail for its passenger trains between Montreal and Quebec City. •

MORT DANS L'EXERCICE DE SES FONCTIONS

Yvan Thériault

MONT ST-HILAIRE, Québec — Les enquêteurs essaient de trouver la cause d'une collision extrêmement violente de deux trains marchandises du Canadien National le 30 décembre 1999 au Mont St-Hilaire, Québec. Les deux travailleurs du chemin de fer ont été tués, incluant le membre de la FIL Yvan Thériault. Le chef de train Paul Davis est aussi décédé lors de la collision.

Le Confrère Thériault, 47 ans, était un membre de la FIL, Division 558 (Charny, Québec). Il a joint la FIL le 1er septembre 1977. Il laisse dans le deuil son épouse Andrée, son fils Frédéric et sa fille Caroline.

Le service funèbre a eu lieu le samedi 8 janvier à St-Nicolas, Québec.

Le train, dans lequel Thériault et Davis travaillaient, est entré en collision avec un autre train, engendrant des explosions et des flammes impressionnantes qui ont forcé 700 personnes à évacuer leurs maisons.

La boule de feu a envoyé des flammes à plus de 50 mètres dans les airs et a illuminé le ciel nocturne. Des nuages de fumée noire ont jailli du brasier emportant une odeur de brûlé sur des kilomètres à la ronde. « Le feu était si gros que mes hommes n'ont pu s'approcher à plus de 500 pieds (150 mètres), » a dit Gilles Dubuc, chef de la sécurité publique de la ville.

Nonobstant la perte des deux hommes, cet accident aurait pu être pire.

« Dieu merci, ce n'est pas arrivé dans les limites de la ville. Ça aurait pu être une catastrophe et nous aurions dû évacuer la moitié de la ville parce que la voie traverse la ville. »

Environ 13 000 personnes demeurent dans la communauté.

Les deux trains voyageaient dans des directions opposées sur différentes voies lorsqu'ils se sont rencontrés à Mont St-Hilaire, environ 50 kilomètres est de Montréal. Les officiers du CN ne peuvent dire ce qui s'est passé mais ils soupçonnent le déraillement d'un des trains qui se serait renversé sur l'autre.

Un homme qui a été évacué a dit qu'il a vu « un nuage en champignon dans le ciel. Les fenêtres de ma maison ont tremblé. »

Mario Masse, qui vit à environ un kilomètre du site de l'accident, a dit qu'il pouvait sentir la chaleur du feu sur ses joues.

« Il y a eu trois e xplosions et à la troisième explosion, nous étions à la fenêtre et pouvions sentir la chaleur sur nos visages, » a dit Masse. « L'électricité a été interrompue pour environ trois ou quatre secondes, » dans sa maison au moment de la collision.

« Nous avons entendu ce qui semblait être un déraillement ou une collision. Ensuite nous avons vu les flammes qui sortaient des trains. »

Les mêmes voies sont utilisées par VIA Rail pour ses trains voyageurs entre Montréal et Québec. •

IN THE LINE OF DUTY

R.A. Oertwig

BUCKEYE, Iowa — BLE member R.A. Oertwig was killed, and two others were injured, when a Union Pacific freight train struck a tractor pulling a manure trailer tank November 6, 1999, in rural Hardin County, Iowa.

The train's engineer, Randy Oertwig, 48, of West Des Moines, died in the accident. Oertwig was member of BLE Division 778 (Des Moines) and a 21-year employee of Union Pacific Railroad.

The accident happened about 1 mile northeast of Buckeye at 4:14 p.m., said Hardin County Sheriff's officials. Twenty-two of the freight train's 50 cars and two locomotives derailed in the crash.

"As far as I know, the investigation is finished," said Mark Davis, spokesman for Union Pacific Railroad in Omaha. "We know the driver of the tractor failed to yield to the train."

Richard Merical, 51, the train's conductor, sustained a severe injury to one of his hands and numerous facial lacerations. Merical was taken to Mercy Medical Center in Des Moines, where he was listed in fair condition on November 7.

The driver of the tractor, Brian King, 23, of Hampton, was taken to Ellsworth Municipal Hospital in Iowa Falls.

Iowa State Patrol officials said King's tractor failed to yield to the train as it tried to cross the tracks at the intersection of 180th Street and G Avenue.

Two locomotives and 50 cars were on their way from Minneapolis to Des Moines, said Mark Davis, spokesman for Union Pacific Railroad in Omaha.

Waterloo's Hazardous Materials unit was called to the accident because about 5,000 gallons of diesel fuel spilled from the train's wreckage. The liquid manure being transported soaked into the ground and is not a hazard to the area, Phillips said.

Liz Gilbert, who lives about three miles east of Buckeye, said the accident happened at the intersection of 180th Street and G Avenue, about a half-mile east and one mile north of the town.

"The intersection was an accident waiting to happen," she said. "It's a very bad intersection."

Eyewitnesses said the accident occurred near the Heartland Pork Enterprises hog confinement operation. Calls to the plant were not answered.

Gilbert said dust raised by Heartland Pork Enterprises' manure trailers as they drive down 180th Street and other gravel roads in the area makes vision difficult.

"You drive down the road, and you cannot see anything coming but dust," Gilbert said.

Train accidents are nothing new to Buckeye, a town of about 105 people 50 miles west of Waterloo. In 1994, two train accidents in one week killed three people, forcing the city to close Ellsworth Avenue where it crosses the train tracks.

BLE NEWS

Positive Train Control

Continued from Page 1

The paper was written to address the concerns raised by all of labor regarding the potential for too much reliance on technology, which could result in a loss of situation awareness and a degrading of skills by train crew members.

The authors' view emphasized a human-centered design philosophy, in which PTC would serve as a "guardian angel" to train crew members, only coming into play during emergency situations.

In its 23-page report, BLE took the position that locomotive engineers and conductors should continue to operate all trains throughout North America. BLE also argued that too much reliance on technology could create safety concerns and, even though PTC can save lives, it should not be relied on exclusively or employ automation that can cause the loss of skills required to operate trains safely. For example, if locomotive engineers and conductors were to rely too heavily on PTC, then their operating skills would diminish. If PTC were to fail, then engineers could be "out of practice" with their train handling skills, resulting in a dangerous situation.

In addition, BLE took the position that the PTC technology should not be a diversion. It should not require so much attention that it distracts train crew members from the performance of their other duties.

There were five main conclusions drawn from the report:

(1) Over-reliance on (or not knowing how much to rely on) automation, and the added distraction of or unfamiliarity with monitoring automation, are well-known problems in the human factors literature, but there are few easy remedies.

(2) Maintenance of the locomotive engineer's perceptual, decision-making and control skills must be considered mandatory.

(3) A PTC system should provide an auditory warning of appropriate hazards and graphical information about stopping profiles from the given speed. Otherwise, it should allow for manual operation, unless certain limits are exceeded, at which point automatic braking enforcement would go into effect.

(4) Failures of a PTC system should be announced by a clearly discernible auditory alarm, and the type and time of failure recorded on the locomotive event recorder.

(5) Special classroom and simulator training for PTC operation, including failure scenarios, should be given to train crews.

The main goals of PTC are: to prevent train-to-train collisions (positive train separation); to enforce speed restrictions, including civil engineering restrictions (curves, bridges, etc.) and temporary slow orders; and to provide protection for roadway workers and their equipment operating under specific authorities.

(The BLE's paper on PTC will be published over a series of Newsletters. Part 1 is below.) •

'Reliance' and 'distraction' effects in PTC automation

By T. B. Sheridan (MIT),
F. C. Gamst (Univ. of Mass., Boston),
and R. A. Harvey, BLE

White Paper, 11/28/99

EXECUTIVE SUMMARY

This document was requested by T. Raslear of the Federal Rail Administration (FRA) on 3/3/99 of the PTC Human Factors Team in conjunction with ongoing discussions of PTC standards. The charge was to investigate the "reliance effect" and the "distraction effect," where definition and focus were left to the authors.

With regard to future automation of railway systems, and in particular with regard to the implementation of Positive Train Control (PTC), questions have been raised about the possible propensity for a locomotive engineer (LE) or conductor (C) to become over-reliant on automation and/or to become distracted by the additional monitoring burdens required by the automation, and for these effects to compromise the performance of their duties and for safe and efficient train operation.

This white paper is organized by section as follows:

(1) First, details on the charge given to the authors by the FRA.

(2) Next, working definitions of terms "reliance effect" and "distraction effect" and the issues surrounding them.

(3) Review of the general human factors literature regarding humans and automation, and specifically the reliance and distraction phenomena — for example in piloting aircraft, driving highway vehicles, operating nuclear power plants and performing routine machine operation tasks. For each of the reliance and distraction effects the relevance to PTC automation is discussed.

(4) Details of the relation of reliance and distraction to operations under PTC, along with implied recommendations. This section, the longest, reviews the "open system" nature of the rail transportation system, proposes a "human-centered" design philosophy for PTC, comments on the relevance of the UK's Great Western accident of 1997, discusses which kinds of distraction are particularly threatening, analyses the potential levels of automation for PTC design, and recommends which level seems best for safety.

(5) Classroom and simulator training for PTC.

(6) Conclusions.

The conclusions are:

(1) Over-reliance on (or not knowing how much to rely on) automation, and added distraction of having to (or poor ability to) monitor automation, are well known problems in the human factors literature, but there are few easy remedies.

(2) Maintenance of the locomotive engineer's perceptual, decision-making and control skills is considered mandatory.

(3) A PTC system should provide an auditory warning of appropriate hazards and graphical information about stopping profiles from the given speed. Otherwise it should allow for manual operation, unless certain limits are exceeded, at which point automatic braking enforcement should go into effect.

(4) Failures of a PTC system should be announced by a clearly discernible auditory alarm, and the type and time of failure recorded on the locomotive event recorder.

(5) Special classroom and simulator training for PTC operation, including failure scenarios, should be given to train crews.

1. Charge from the FRA

The original charge to the RSAC "Human Factors Team" dated 3/30/99 was as follows.

(1) "Investigate the 'Reliance Effect' on the non-fail safe systems. Will the operator become reliant upon the overlay system and become less attentive? If so, is it possible to estimate the effect on the safety of railroad operations? Are there countermeasures or redesign alternatives that warrant exploration?"

2. 'Investigate the 'Distraction Effect' associated with frequent or complex requirements to interact with the system. Is this a legitimate concern? To what extent? If it is a significant problem, is it possible to describe tolerable limits for these interactions and redesign alternatives that warrant exploration?"

The 9/8/99 Report of the Railroad Safety Advisory Committee to the Federal Railroad Administrator (page xiii, item 5.c) reads: "Develop human factors analysis methodology to project the response of crews and dispatchers to changes brought about by overlay' type PTC technology, including possible 'reliance' or 'complacency' and 'distraction' effects (initiated 2nd quarter 1999). Apply methodology to candidate projects."

2. The Concepts of Reliance and Distraction

2.1 Purpose of PTC and PTS

PTC has been defined to have the following core features in the Railroad Safety Advisory Committee's report to the Federal Railroad Administrator "Implementation of Positive Train Control Systems" (RSAC, 1999: vii, 16-17).

(1) Prevent train-to-train collisions (positive train separation).

(2) Enforce speed restrictions, including civil engineering restrictions (curves, bridges, etc.) and temporary slow orders.

(3) Provide protection for roadway workers and their equipment operating under specific authorities."

It should be noted that Positive Train Separation (PTS) is included in the core-feature definition of PTC. Consequently, PTS need not be mentioned in discussion of PTC without a particular reason to do so.

2.2. Working definitions of "Reliance Effect" and "Designed Reliance" in PTC Automation

The "reliance effect" is taken to refer to the tendency of the LE, C or train dispatcher to over-rely (rely more than the system designers or managers intend) on automation such as PTC in performing work tasks, particularly to the degree that the automation is deemed not to be fail-safe by itself. Concepts closely related to "reliance" are "complacency" and ''over-trust.

Insofar as the system is intentionally designed, or the level of automation is such, that the that the human operator is compelled or encouraged to defer to the automation, we call that "designed reliance." In Section 4.5 below we make specific recommendations in that regard. There may be a thin line between intentional, designed-in reliance and unintentional over-reliance, especially as understood by the human operator.

2.3. Definition of Distraction Effect in PTC Automation

The "distraction effect" is assumed to refer to the tendency of the LE to be distracted from other duties by frequent or complex cognitive interactions with the automation to plan and program its operation, monitor its performance, detect and diagnose and stay aware of any abnormalities, and rectify any abnormalities and ensure control. (Of course there are other distractions from radio conversation or wayside events.) Associated with "distraction" are the concepts of "mental workload," "attention deficit," and decrement in "situation awareness."

2.4. Levels of Automation

Insofar as reliance implies reliance on automation by design it is sometimes useful to consider levels of automation from none to full computerized automation. The following scale (Sheridan, 1987) has been used in a variety of contexts:

1. The computer offers no assistance: the human must do it all.

2. The computer suggests alternative ways to do the task.

3. The computer selects one way to do the task, and

4. …executes that suggestion if the human approves, or

5. …allows the human a restricted time to veto before automatic execution, or

6. …executes automatically, then necessarily informs the
human, or

7. …executes automatically, then informs the human only if asked.

8. The computer selects, executes, and ignores the human.

The tendency to move further along this scale has been a continuing trend in recent years, and is most evident in the evolution of commercial aircraft. It began with autopilot systems, then came navigation aids, then diagnostic aids, collision and stall and ground proximity warnings, and finally the integration of all these into the Flight Management System, a multi-purpose computer system which oversees all functions and through which the pilot flies the aircraft. Pilots now call themselves "flight managers." Similar evolution is beginning to happen in highway vehicles, ships, factories, chemical plants, power stations, and hospitals as well as trains. It is commonly called "supervisory control" (see Sheridan, 1987, 1992).

3. Review of Reliance and Distraction Effects in the General Literature, and Their Relevance to PTC

In considering the experimental literature as well as practical experience with automation in piloting aircraft, driving highway vehicles, operating nuclear power plants and performing routine manufacturing tasks, one cannot discuss reliance without discussing complacency and trust.

3.1. Reliance Effect in the General Literature

When machines or people demonstrate their reliability it is only natural to depend on, indeed trust, them. Most of the technology around us works well, and even though our life may depend upon it, we simply do not think about it. Do we rely on the roofs over our heads or the buildings we are in not to fall down? Do we trust our brakes to slow and stop our cars from high speeds? Obviously we do - unless there are environmental circumstances (e.g., earthquakes, very steep hills) which cause us to make closer observations, or unless we receive unexpected signals (ominous noises, leaking oil, etc.). To some degree reliance on trustworthy systems is proper behavior, since we do not have time or attentional capacity to attend to and worry about everything around us. Clearly, however, one can become reliant on automation, trusting and complacent (insofar as the third term implies the first two) to a degree greater than is justified by the small risks which may be involved (where risk means probability of serious consequences times magnitude of those consequences.) There have been numerous studies of human reliance on automation recently (see, e.g., Riley, 1994; Sheridan, 1992; Parasuraman and Moula, 1994; Moula and Koonce, 1997).

Safety engineers have long worried about whether, if actions are taken to make systems safer, operators will simply take advantage of that safety margin to take correspondingly more risks, to the point where level of safety remains constant. The technical term for this is "risk homeostasis." Evidence in automotive vehicles is clearly that as brakes, tires, handling qualities and highways have improved drivers drive faster. Are they driving so fast that the safety improvements are nullified? Apparently not, for mortality and morbidity rates per passenger mile have declined significantly over the last 50 years (see National Highway Traffic Safety Administration database). At the same time it can be said they are not as safe as they would be if they continued to drive at the same speeds as they did 50 years ago. So clearly in this context risk homeostasis, in the sense of behaving so as to maintain constant risk, is a false premise. But, surely, drivers are taking advantage of the technology to achieve greater performance while maintaining acceptable risk, where what is acceptable is now significantly safer than it was earlier. "Acceptable" is an important term in understanding human behavior relative to risk. It is also a relative term regarding danger to humans and property. What might be acceptable to persons removed from a danger might not be to persons directly affected by such danger.

The story with respect to risk homeostasis appears to be similar in other aspects of driving and in other transportation contexts. Currently there is worry that radar-

based intelligent cruise control systems will lead drivers to follow the lead car more closely, and that GPS-based air traffic displays in the cockpit, heretofore not available to pilots (only the ground controllers saw radar returns) will lead pilots to second-guess ground controllers and take more chances.

"Trust" is a term which is relatively new in the human factors literature but which is drawing much attention. The term can have different subtle meanings, but usually it relates to the subjective expectation of future performance. Muir and Moray (1996) showed that as automation errors manifest themselves trust declines and monitoring behavior increases. Lee and Moray (1992) showed that subjective trust is a significant determiner of whether an operator will use an automatic controller or, given the choice, or will opt for manual control. They modeled subjective trust as a function of both overall automation performance, the seriousness of faults, and the recency of faults. They also discuss the mounting evidence that a system is less trusted if there are no clear indications about what it is doing or about to do. Aircraft pilots, for example, frequently complain that they cannot tell what the automation is thinking or will do next (Woods and Roth, 1988).

Should we worry that human supervisors of automation may become complacent? Clearly this begs the further question of what is the optimum level of sampling the displays and/or adjusting the control settings. If, given the relative costs of attending to the automation (less time available to attend other things) and not attending, plus some assumptions about the statistics of how soon after a sample the automation is likely to become abnormal, one can specify an optimal sampling rate (Sheridan, 1970). If the operator samples at the optimal rate that of course does NOT mean that critical signals will never be missed - they still occasionally will. Moray (1999) argues that if the optimal rate is not specified one can never assert that there is complacency (assuming it means sampling at less than the optimal rate). A recent qualitative model by Moray, Inagaki and Itoh (1999) suggests that in the absence of faults or disagreements with the decisions of the automation, subjective trust asymptotes to a level just below the objective reliability, which does not suggest complacency.

A concern with automated warning systems is that a very small percentage of warnings truly indicate the condition to be avoided. This occurs because the designer has set the sensitivity threshold such that false alarms occur much more often than misses (the misses carrying a much more serious consequence) —which is rational based on the objective tradeoff between risks associated with each.

Signal detection theory, the same analytic techniques that design engineers developed during World War II to decide how to make the optimal trade-off between false alarms and misses, has by now been widely applied to measuring how humans should or actually do make the trade-off (Swets and Pickett, 1982; Parasuraman et al., 1998). It requires knowledge of probability densities for true positives (hits) and false positives (false alarms) as functions of input signals or symptoms, or the equivalent relative operating characteristic (ROC) curve - the cross-plot of probability of hit vs. probability of false alarm. It has been shown that the human operator does not respond mechanically and indifferently to these events. Indeed, the fact that the warning system may "cry wolf" so often may lead the operator to lose confidence in the automated warning system and come to respond slowly or even ignore it (Getty et al., 1995).

Classical expected-value decision theory, from which signal detection theory is derived, can also be used to make optimal decisions as to whether one or another form of automatic fault detection system is better, or whether the human is better (Sheridan and Parasuraman, 1999).

3.2. Operating Crew Reliance, Trust and Complacency with PTC

With regard to "risk homeostasis" there is some question as to whether a LE or C would ever be motivated to "take advantage" of the safety margin in a PTC system. This is because of an ever-present electronic monitoring of their acts. The event recorder on locomotives should be an interacting subsystem of PTC. Event recording should be of failures in PTC and other automation as well as errors in human performance. The overall PTC system will serve as a kind of event recorder, just as does the present centralized train control (CTC) system. Thus any infraction of the operating rules by the LE will meet with the normal disciplinary procedures and penalties—all the more so with the teeth in the rules of FRA certification, and decertification.

At present many computer workstations in ordinary business offices monitor and record the nature of an employee's work tasks and the speed, accuracy, and rules-compliance of employee performance. The ability of PTC, similarly, to monitor electronically operator compliance with the rules is comprehensive. The on-locomotive computers are all the more effective in this monitoring because of their interfacing with other machine systems, usually, having electronic and, often, computer characteristics. Railroads have traditionally and are required by FRA regulations to conduct in-field efficiency tests for operating employees. PTC has the capability of continuously testing operating personnel.

It is generally true that in automated warning systems only a very small percentage of warnings truly indicate the condition to be avoided— most are false alarms. Nevertheless, in railroading danger signals are ordinarily observed. We distinguish between false alarms not safety critical and those that constitute railroading's "danger (stop)" signals. And we realize the great operating frequency of such rail danger signals. A nonsafety in-cab warning such as "hot engine" or "dynamic brake overload" might go immediately unheeded but not so with a danger signal. First, the danger signal (such as red stop-and-proceed signal) is common in railroading. Repeating these signals on a display in the cab does not necessarily make them any different in their operating effect on personnel. Second, railroaders do not lose confidence in a danger signal: it might be for real; it might be an efficiency test; or it might be a false-alarm "wolf cry." But all tend to be heeded, regardless.

We would have to hypothesize PTC-generated wolf cries of danger signals that would overcome the particular culture of safety in railroading that observes possible wolf cries as danger signals. For example, when two torpedoes unexpectedly explode on the rail head and, from experiential knowledge, the LE immediately reduces to and observes restricted speed, it does not matter whether a MOW flagman forgot to pick them up at the end of the workday, or he left them for a good, unanticipated, reason. This is not an argument against a need for PTC. The LE or C could be incapacitated or distracted when first confronted with a danger signal.

A falsely and reportedly overacting warning device for a danger signal, such as an in-cab alarm, might not be heeded as much as one not giving false signals. But, then, the railroad rules ordinarily call for eliminating such failed components and a consequent operating under more restrictive rules than previously.

3.3. Distraction Effect in the General Literature

The long accepted Yerkes-Dodson "law" in experimental psychology refers to the notion that with very low attentional demand humans get bored and drowsy and are not vigilant, while with very high attentional demand people cannot take in all appropriate information. Performance is best in a broad middle-range of attentional demand.

During World War II there was interest in the low end of this curve because watches on ships and monitors of sonar in submarines and radar in aircraft ground control stations found themselves scanning electronic displays over long periods for signals which seldom occurred. The associated research was identified with the term "vigilance", and the net result was a variety of studies which showed that after about 30 minutes people's monitoring performance declines significantly (Mackworth and Taylor, 1963). Associated studies of operators performing visual inspection tasks on assembly lines produced a similar result. Allegedly it was asserted that in one test of a cola bottle washing inspection operation, a higher percentage of clean bottles resulted when cockroaches were randomly added to bottles at the start of the line.

Interest in the high-demand end of the curve peaked in the mid 1970s when many new attentional demands were being placed on fighter aircraft pilots, and military laboratories started research on "mental workload." At that same time, in conjunction with the certification of the MD-80, pressures from aircraft manufacturers and airlines to automate and allegedly justify reducing the crew from three to two set off a dispute with the pilots. The regulatory agency, the Federal Aviation Administration, turned to the human factors community to observe commercial pilots and try to define mental workload. After a flurry of research, four methods were evolved to define and measure mental workload: physiological indices, secondary task measures, subjective scaling, and task analysis (Moray, 1988). It should be noted that physical workload is nowadays relatively easily measured by percent of CO2 increase between inhaled and exhaled respiratory gas, but this physical workload has no correlation with what is called mental workload.

The various physiological indices tested over the years include: heart rate variability, particularly in the power spectrum at 0.1 Hz.; galvanic skin response (as in a lie-detector test); pupil diameter; the 300 msec characteristics of the transient evoked response potential; and formant (spectral) changes in the voice (frequencies rise under stress). Unfortunately none of these measures has proven satisfactory for most requirements because the measures have to be calibrated to the individual being measured and because they usually require relatively long time samples — often longer than the period over which one seeks to measure changes in mental workload.

The second measure of mental workload is the secondary task. It assumes that a human monitor has a fixed workload capacity, and that by giving the test subject some easily measurable additional task (such as performing mental arithmetic or simple tasks of motor skill), along with specific instructions to perform the secondary task only as time is NOT required to perform the primary task, "spare capacity" can be measured. The assumption is made that the worse the performance on the secondary task the greater are the primary task mental workload. This technique has been used successfully in laboratory tests, but is usually impractical in real-world tasks such as landing an aircraft since operators refuse to cooperate because of possible compromise with safety.

A third method, subjective scaling, is not the design engineer's ideal, simply because it is subjective rather than objective. Yet it is the method most often used, and indeed is the method most frequently used to validate the other methods. NASA has developed a subjective scale called TLX and the U.S. Air Force a scale called SWAT (Williges and Wierwille, 1979). Multi-dimensional subjective scales have been suggested, including for example fraction of time busy (spare capacity), emotional stress, and problem complexity -the idea being that these are orthogonal attributes of a situation (Sheridan and Simpson, 1979).

The fourth method, task analysis, simply considers the number of items to be attended to, the number of actions to be performed, etc. without regard to the operator's actual performance or subjective sense of workload. This method has been criticized as not really being about mental workload because it neglects level of training or experience. A well trained or experienced operator, after all, may have an easy time performing a task, i.e., with insignificant mental workload, where a novice might be heavily loaded. However, such task analysis is amenable to objectivity, for example use of the Shannon (1949) information measure H= average of log [l/p(x)], p(x) being the probability of each different stimulus element (x) which must be attended to (or different response element which must be executed). This provides an index of "difficulty" or entropy (degree of uncertainty to be resolved). The problem lies in the somewhat arbitrary classification of stimulus and response elements.

For simple tasks the greater the mental work load and/or information difficulty (entropy) H the greater the operator's response time (Hick, 1952; Fitts, 1954) in almost direct proportionality to H. For complex tasks there may be great variability in response time. It is well established that human response times follow a log normal probability density, meaning that no response takes zero time, and the 95th percentile may be one or two orders of magnitude greater than the median. Experiments of experienced nuclear plant operators responding to simulated emergencies showed an almost perfect fit to a log normal function (Sheridan, 1992). The long responses often result from confusion about what problem is presented to the person and what is the expected criterion for satisfactory response.

There have been numerous studies to determine whether operators are better monitors or failure detectors when they are controlling a task manually or when they are monitoring automation. Mostly these studies have shown that performance capability (in terms of failure detection and response recovery) declines when operators are monitors of automation and the automation fails. (Wiener and Curry, 1980; Desmond et al., 1998; Wickens, 1992). However, at the extreme where the operator is so heavily loaded performing manual operations that there is no attentional capacity remaining for failure detection, automation may provide relief and improved capability to detect failures.

One problem with automation is that there may be very little to do for long periods of monitoring, but suddenly and without warning, the automation may fail and/or unexpected circumstances may arise, and the operator is expected to get back into the control loop instantly to set matters straight. Such workload transients are deemed to be more troublesome in many cases than sustained period of high workload, for the operator is unlikely to be able to "wake up" and figure out what is happening, and quickly make the correct decision.

A currently popular term in aviation is "situation awareness". The ideal is have a maximum level of situation awareness. A means to test situation awareness in a simulator experiment is to stop the simulation abruptly and unexpectedly and ask the subject to recall certain stimuli or response events (Endsley, 1995; Endsley and Kiris, 1995). Improvements in graphic displays and decision aids have been suggested to enhance situation awareness. Automation which is opaque to the user may well impede situation awareness. However it has been pointed out that to the extent that an operator expends more mental effort on situation awareness, to that extent less spare mental capacity, if we can accept that notion, remains for decision and response execution (Sheridan, 1999).

3.4. Maintaining Performance in a Broad Middle-Range of Attentional Demand

Given the Yerkes-Dodson "law," that with very low attentional demand humans do get bored and drowsy and are not vigilant, and with very high attentional demand people cannot take in all appropriate information, safety is clearly best in a broad middle-range of attentional demand. But how do we assure this in PTC operations for the C and LE? The most effective way to assure operation in the mid-range is by skills maintenance through retention of most pre-PTC motor and cognitive work tasks, despite the "designed in reliance" effect of PTC. A primarily manual operation of trains by the LE and C, with a fully automated safety compliance backup is, therefore, necessary. This primary manual operation should be at the reliance level-2 of the automation scale (the PTC suggests alternative ways to do the task) or, perhaps, 3 (the PTC selects one way to do the task). That is, the system provides an audible warning in advance of a civil speed restriction (CSR), a signal (in-cab or otherwise) change to a more restrictive indication, or some other restriction of train movement. And the system also meets the requirement of PTC in that the restrictions will be enforced by a sub-system on board the locomotive at level 6 (the PTC executes automatically, then necessarily informs the human and the event recorder). In all, the automation scale level of 2 or 3 is what we strive for as normal PTC operation, but level 6 must always be operable in the background as the safeguard.

Part 2 of the PTC White Paper will be published in the February 2000 issue of the Locomotive Engineer Newsletter.

A complete copy of the 23-page report can be found on the BLE webpage, http://www.ble.org. •

BLE NEWS

BLE, three rail unions commit to solidarity

Solidarity

Continued from Page 1

tation workers in the 21st Century, expanding the power of both in the Transportation industry," said BMWE International President Mac Fleming.

"We are pleased with the results and the determination of the parties in working together immediately on these critical issues. It builds a solidarity and breadth that has been lacking in Rail labor for many years," said BLE President Ed Dubroski.

"Working together voluntarily and collectively makes each union more able to provide for their members and starts a process which will lead to ever closer ties," said Sonny Hall, President of the TWU.

"Our members need the backing of a larger group to advance their own interests and this kind of development will lead to such backing," stated Leo McCann, President of the ATDD.

All four Presidents stated jointly, "We intend to remain active participants in and supporters of the Rail Division of the Transportation Trades Department, the Transportation Trades Department and the AFL-CIO."

The Unions combined represent over 200,000 Transportation workers, approximately 85,000 of whom are railway employees in the United States and Canada.

Merger mania continues

BNSF, CN propose $19 billion combination

MONTREAL — On December 20, 1999, Burlington Northern Santa Fe and Canadian National confirmed rumors that had been circulating for several weeks and announced they would merge into a $19 billion holding company to create North America's largest railroad. The new company, to be called North American Railways Inc., will be based in Montreal and will boast almost 50,000 miles of track, stretching from Halifax on the Atlantic coast to Vancouver on the Pacific and southward to New Orleans and Los Angeles.

The Brotherhood of Locomotive Engineers vowed to protect the interests of all railroad operating employees as it monitors the proposed merger.

"Railroad companies always say there will be no job losses in mega-mergers of this type, but history has taught us otherwise," said BLE International President Edward Dubroski. "While we have yet to do so at this early stage, we look forward to meeting with leaders of BNSF and CN to protect the rights and jobs of our members."

The combination of Montreal-based Canadian National, Canada's biggest railway, and Fort Worth, Texas-based BN, the number two U.S. railroad, comes just six months after CN closed its 1998 acquisition of Illinois Central Corp. in a $3 billion transaction.

Under the terms of the deal, CN shareholders will receive 1.05 CN voting shares for each CN common share and the choice of either 1.05 North American Railways common stock or 1.05 CN shares exchangeable for the equivalent of North American Railways. The CN voting share will trade together with the exchangeable share as one security. To implement the transaction in a tax-efficient manner, North American Railways, Inc. will be created as the parent company for BNSF and as the companion company for CN.

Burlington Northern shareholders will receive one North American Railways common share and one CN voting share which will trade as one issue.

The resulting 50,000-mile system, blanketing the U.S. West and stretching from Vancouver to Halifax in Canada, will have 67,000 employees and annual revenue of $12.5 billion.

It was recently revealed that BNSF has agreed to pay CN $300 million if the deal goes sour. Canadian National would have to pay BNSF $150 million in those same circumstances.

Through their trade associations, shippers questioned the wisdom of the merger coming at this time.

Linda Morgan, chairman of the STB, appeared to have been caught off guard by the latest move to consolidate the railroad industry.

"I am surprised by the timing of this proposal," she said. "Railroads, together with their customers and employees, have not yet fully adjusted to recent mergers, and this proposal may represent the beginning of another round of major rail mergers. The Board will have to review carefully all of the ramifications of any such application that may be filed," Morgan said.

Jolene Molitoris, Administrator of the Federal Railroad Administration, said safety will be a key issue in approval of the merger.

"The U.S. Department of Transportation is concerned with all aspects of rail mergers, from the impact on competition to the effects on labor, communities and the environment," Molitoris said. "We will be an active participant in the proceeding before the Surface Transportation Board, and will consult closely with all stakeholders as we develop our position on this merger as we have in the past. First and foremost, however, our primary responsibility is to ensure the safety of any newly-merged system."

The other four major railroads not involved in the merger placed ads in newspapers directed at rail-users voicing their opposition to the merger. The campaign seeks to delay the deal rather than kill it outright, the Journal of Commerce reported.

Union Pacific, Canadian Pacific Railway, Norfolk Southern and CSX fired the first salvo in the campaign with these ads. Sources said the idea for the ads originated at Union Pacific.

Analysts have said that U.S. regulatory approval by the Surface Transportation Board and support from shippers and labor unions are the biggest hurdles facing CN and BN in their merger. The merger must be approved by the STB and stockholders of each corporation. •

Town Hall Meetings

Continued from Page 1

iam C. Walpert reports that more than 125 BLE and UTU members attended the meetings. The BLE has had other successful Town Hall meetings in Cheyenne, Wyo.; Salt Lake City; Pocatello, Idaho; Green River, Wyo.; St. Louis, Mo.; Houston, Texas; and Little Rock, Ark.

In addition, BLE Special Reps and members of the National Mobilization Team have held dozens of other organizational meetings across the UP system.

The 17 new members in North Platte is nothing new to the BLE, which has seen an increase in overall membership in 33 of the past 35 months. In fact, the BLE gained over 1,300 new, active members from September through December alone.

Organizers of the BLE Town Hall meetings have come to expect negative input from "spies," hired by the UTU International and paid to attend the meetings for the sole purpose of generating hostility.

This plan has backfired on the UTU, however, as many UTU members who attended the BLE Town Hall Meetings ended up joining the BLE after hearing both sides of the story.

The UTU has held its own version of the BLE's Town Hall Meetings. However, BLE members who have attended these meetings report that the UTU clouds the truth surrounding the real issues and only focuses on hype and mudslinging. In fact, the UTU does not even distribute copies of its January 12, 1998 petition to the National Mediation Board at its meetings, which is the cause of the current dispute between the BLE and UTU.

In an attempt to thwart the success of BLE's meetings, the UTU International has used its resources to paint them in a negative light, using its news media to report only partial statements and half-truths.

"The UTU accuses us of using scare tactics," Walpert said. "If they consider the truth a scare tactic, then that's what we're doing."

Walpert said a main topic of discussion at the Town Hall meetings is the possibility of the entire UP property turning non-union. This would happen if the NMB orders a representation election and less than 50 percent of eligible voters cast ballots.

UTU has also quoted BLE Vice-Presidents Rodzwicz and Walpert as calling this scheme "absolutely brilliant." Again, UTU has purposely misled workers through its media outlet and only reported half of the truth.

BLE and UTU members alike attend a Town Hall Meeting on December 17 in North Platte, Neb., to hear the truth regarding the UTU's application to combine all operating crafts on the Union Pacific Railroad.

"We said the plan was brilliant, but brilliant in a diabolical way," Rodzwicz said. "Diabolically brilliant like the Kamikaze pilots of Japan during World War II, or diabolically brilliant in the way a terrorist drives a car bomb into a building. Yet the UTU has taken this as a compliment by only reporting half of what I said."

On the Quebec North Shore & Labrador Railway in Canada, the UTU signed an engineer-only agreement that compromised safety of rail workers and eliminated close to 100 jobs. In a recent report filed by the Transportation Safety Board of Canada (TSB), which is the Canadian equivalent of the U.S. National Transportation Safety Board, the UTU was criticized for compromising safety with its contract agreement.

"Several agreed-upon contractual provisions actually work against... reducing the amount of rest a locomotive engineer can take at his 'away-from-home terminal' from nine hours to seven hours, and restricting locomotive engineers from obtaining relief en route until they have been on duty for 12 hours as opposed to 10 hours," the TSB wrote in its analysis of a recent QNS&L derailment. •

BLE halts bogus UP safety program

The Brotherhood of Locomotive Engineers was victorious over the Union Pacific Railroad on December 16 as it obtained a temporary restraining order that halted the railroad's implementation of a bogus "Safety Awareness Training" program.

The program was nothing more than a way of harassing and intimidating employees who were injured through no fault of their own, the BLE successfully argued.

"Union Pacific unilaterally established this program to further harass and intimidate employees who get hurt," said UP General Chairman Gene Thompson. "It's just the UP mentality."

Under the SAT program, workers who were recently injured, or injured twice in the last five years through no fault of their own, were brought in for a full day session of graphic videos and intimidating speeches delivered by Union Pacific management. In addition, workers subjected to the SAT program were secretly observed for 90 days.

The videos were filled with violence and gore, including arms and limbs being amputated and railroad workers being crushed and mutilated between coupling railroad cars.

UP claimed the SAT program was created to improve safety, but some employees were subjected to the program even though they were injured through no fault of their own.

For example, a locomotive engineer who was injured while riding home from work in a company provided van. The window was down and the engineer was hit in the face with an egg thrown by a teenage vandal.

The temporary restraining order, which applies to the entire UP system, was issued by Federal Judge Herndon of the Southern District of Illinois.

The Restraining Order prohibits UP from implementing the SAT program indefinitely. Further hearings were scheduled for December 22, but have been postponed indefinitely at the request of UP management.

Who are the NMB panel members?

The three members of the panel chosen by the National Mediation Board to resolve the BLE-UTU dispute are noted for their vast wealth of experience and knowledge in labor relations.

Arnold M. Zack, Richard I. Bloch and Richard R. Kasher will make a final and binding decision on whether "Train and Engine Service Employees" is the proper craft on Union Pacific and whether the UTU properly invoked the Board's Railroad Merger Procedures in this case.

Arnold Zack, who will chair the panel, currently resides in the Boston area and received his A.B. from Tufts University in Mass. He went on to receive a L.L.B. from Yale Law School and returned to the Boston area to receive a Masters in Public Administration from Harvard University.

He has worked as an arbitrator in a variety of industries including: automotive, aerospace, bakery, beverage, entertainment, broadcasting, retail, chemical, gas and electric power and the public sector.

Mr. Zack has also worked as a consultant to the United Nations Mission to the Congo, to the U.S. Department of Labor and to U.S. AID. He is a member of the National Association of Arbitrators and the Industrial Relations Research Association.

He is widely respected throughout the labor industry and has written several books, including two with fellow panel member Richard Bloch, titled *The Labor Agreement in Arbitration and Negotiation* (1983) and *Arbitration of Discipline Cases: Concepts and Questions* (1979).

Bloch resides in Washington, D.C. He received his A.B. from Dartmouth College, a Juris Doctorate from the University of Michigan and an M.B.A. from the University of Michigan. He is a labor arbitrator

See **NMB Panel**, Page 8

BLE fights for worker safety at Montana Rail Link

On December 9, the United Transportation Union's fog machine was cranked into high gear — injecting a couple of atoms of fact into a 55-gallon drum of fantasy — concerning a move by Montana Rail Link (MRL) to introduce remote-controlled locomotive operation in its Laurel, Montana yard.

UTU withheld from its members — and the public — several key facts as part of its deceitful campaign to purposely mislead railroad workers. As was the case with the Pacific Harbor Line, the collective bargaining agreement provision invoked by MRL as authority for the remote control project existed before MRL had a single employee in any of its operating crafts. Also, U.S. railroads have been interested in adopting this technology since the "Belt Pack" was introduced in Canada, where the UTU fought for and won for conductors the right to operate locomotives remotely.

The basis for UTU's inaccurate allegations is a single sentence in a December 2nd (not December 3, as UTU erroneously reported) letter from MRL President Daniel K. Watts to BLE members. In the letter, Watts states that MRL, "along with the FRA and your labor representatives, are now in the process of developing... procedures (for a safe and careful manner of operation)," which UTU portrays as "willing cooperation" by the BLE.

The real facts are set forth in a December 10 letter from MRL General Chairman M. W. Geiger Jr., to MRL Local Chairmen:

"As we have previously discussed, Montana Rail Link has not sought, nor been offered, BLE support or concurrence in reaching its decision to pursue remote controlled operations. We were recently made aware that MRL has applied to FRA for authorization to operate such a device.... As a result, we made it perfectly clear to the management of MRL that in the event FRA approves of their plans, we expect the Carrier to address our safety concerns relating to the implementation of this service. We also made it clear that we expect MRL to comply with the provisions of the existing Collective Bargaining Agreement concerning crew staffing requirements.

"As we have since been advised that FRA intends to allow this operation, both of you were asked by this Office to attend a recent meeting set up by FRA and MRL to address our safety concerns. I must reiterate that none of these actions were taken to sanction MRL's intentions... However, MRL's management has studied operations in Canada where these devices are commonplace. Canadian Carriers, with the concurrence of (the UTU), have operated these devices for several years and MRL's management is convinced that its operation will benefit from this technology.

"... I must state that even though the Collective Bargaining Agreement does not preclude the Carrier from utilizing this technology, we still have many concerns over the safety of such an operation. To that end we will continue to monitor MRL's plans as they move toward implementation and ask that you keep us of apprised of all happenings on the property in this regard.

"There are obviously those who will distort the events that have followed MRL's decision to pursue this technology for their own political gain...."

— Montana Rail Link General Chairman M. W. Geiger Jr.

"Although there are obviously those who will distort the events that have followed MRL's decision to pursue this technology, for their own political gain, rest assured that we will continue to do everything in our power to protect the livelihood and safety of all of the operating employees on Montana Rail Link."

In other words, the UTU claim of collaboration is based on the BLE's efforts to safeguard its members from potential hazards connected with remote control operations. Should the BLE not pursue its safety agenda? Obviously, the UTU would prefer that; then they could claim that we are idly standing by and not representing our members.

Not only has the UTU tried to incorporate remote control operation into Canadian agreements, it also has attempted such a move in the U.S. For example, Item 21 of UTU's current Section 6 notice, titled "Locomotive Remote Control/Scope Rule," seeks to "confirm that the operation of remote control devices (black boxes) will be performed exclusively by employees represented by UTU." According to BLE Research Director Dennis Simmerman, this is the fourth consecutive round of national bargaining in which UTU has made this demand.

"The UTU's attempt to completely rewrite history would be laughable, if the job security and safety of all BLE and UTU members were not at stake," says BLE President Ed Dubroski. "The UTU's role in facilitating the industry's agenda to reduce crew sizes over the past 15 years is already well-documented, as is its fight for operation of the Belt Pack in Canada.

"If locomotive engineers, conductors and trainmen want to know what the current UTU leadership has in store for them next, they need look no further than the Quebec, North Shore & Labrador Railway."

On the QNS&L, the UTU-represented operating craft employees were merged into a single, dovetailed roster, and the UTU and the carrier agreed to one-person train operations, which began in July of 1997. Last year, the Railway Association of Canada, which is Canada's equivalent of the Association of American Railroads, unveiled a proposed circular to govern one-person operations throughout Canada's railways that, "was developed in close consultation with QNS&L (and) Transport Canada." •

BLE NEWS

BLE scores big win for post-85 engineers on NS

Inferior deadheading eliminated; BLE secures 14.4% wage increase

Setting the tone for the current round of national wage negotiations, the Brotherhood of Locomotive Engineers has reached a tentative agreement with Norfolk Southern that will have a positive impact for post-85 engineers. Highlights of the deal, which will be presented to BLE members on NS for ratification within a matter of days, are as follows:

• Article VI, Section 2(b) of Arbitration Award 458 (providing for inferior deadheading payments to post-85 engineers) is eliminated, and all engineers will be covered by the deadheading rules currently in effect for pre-85 engineers.

• The special pay differential of $15/day and $0.15/mile, which is payable to all engineers on NS regardless of hiring date, will be rolled into the daily and overmile rates of pay on January 1, 2003.

• The current five-year wage progression, which begins at 75%, is replaced by a three-year progression, which begins at 85%, measured from date of hire; in addition, all engineers currently in the progression will have their percentage increased by 10%, up to the 100% rate.

• Effective January 1, 2000, wage rates on NS will be increased by approximately 14.4 percent.

• In 2001, 2002 and 2003, engineers will be entitled to bonuses of up to 10% of the previous year's wages, under the NS "Thoroughbred Performance Bonus" plan; in 2004 and subsequent years, engineers will be entitled to bonuses of up to 15% of the previous year's wages, under the formula.

• The following issues were referred to the BLE's National Wage Committee for handling with the National Carriers' Conference Committee: Health & Welfare; retirement and disability; meals and meal allowances; availability; paid leave days; off-track vehicle insurance; and detention time.

The BLE bargaining team was made up of Vice President P.T. Sorrow; General Chairmen W.E. Knight, S.D. Speagle, and R.C. Wallace; and Vice General Chairmen L.W. Sykes and W.A. Thompson. Details about the ratification vote will be provided as they become available. •

JANUARY 2000 CALENDAR & EVENTS

JUNE 5-8, 2000… International Western Convention in Jackson Hole, Wyo.
Jim Lance is chairman of the 2000 IWC, which will be held at the Snow King Resort. Billed as the "Millennium Convention — IWC 2000," members can participate in the annual IWC golf tournament or visit the Snow King's famous scenic views. For hotel registration, write the Snow King Resort at P.O. Box S-K-I, 400 East Snow King Ave., Jackson Hole, WY 83001; or call (800) 522-KING or (307) 733-5200. Be sure to ask for the special BLE group rate of $135 per night. Contact Brother Lance at P.O. Box 476, Inkom, ID 83245-0476 or call (208) 775-3377.

JUNE 18-23… 73rd Annual Southeastern Meeting Association in Louisville
Convention Chairman J.G. "Jim" Goodman encourages members to register early as the 2000 SMA promises to be a convention to remember. The Galt House East hotel will host the convention, and a room rate of $85 per night has been secured (rates will increase May 19, 2000). For reservations call (502) 589-5200. To contact Brother Goodman, write: 229 Stout St., Mt. Washington, KY 40047; or call (502) 538-4358. His e-mail address is: <goodble@aol.com>.

JUNE 27-July 1... Eastern Union Meeting Association in Niagara Falls, Canada.
Members are encouraged to plan early for next year's EUMA, hosted by Jack and Pat Murphy (and Division 421) in Niagara Falls, Canada. It will be held at the Sheraton Fallsview Hotel. Room rates start at $154 Canadian per night (approximately $103 U.S.). Make reservations by calling (800) 267-8439, and ask for the BLE group rate. For further, contact Murphy at (716) 627-5354 or e-mail <blemurph@aol.com>.

SEPTEMBER 17-22… 65th Annual Southwestern Convention Meeting in St. Louis
Convention Co-Chairmen James Jackson and Roger King will ring in the 21st Century in St. Louis. September 17 is for early registrants and September 18 is the golf tournament. In between are opening ceremonies, a formal banquet, and several training workshops. The convention will take place at the Marriott Pavilion Hotel, One Broadway, St. Louis, MO 63102. Make reservations by calling (800) 228-9290 or (314) 421-1776. Be sure to ask for the special BLE discount rate.

Advisory Board December Activity

By action of the delegates at the Fifth Quinquennial Convention, summaries of BLE Advisory Board members' activities are published monthly:

International President Edward Dubroski—International Office: General supervision of BLE activities; Meetings in DC w/ counsel on legal issues; Schedule date for national bargaining session; Federation talks; General chairmen's mtg.; UP mtg., North Platte, Neb.; Vacation; UTU NMB application; ATDD conference call; Telephone calls & correspondence; Publications Committee; AFL-CIO Article XX issues; Meetings at ID office.
First Vice-President & Alternate President James L. McCoy—International Office. Assisted president supervising BLE activities; Mtgs. w/ NCCC; FVP duties, contacted GCs, SLBCs, telephone calls, correspondence; Mtgs. w/ ATDD, BMWE, TWU; ARLA mtgs.; TTD mtgs.; Mtg. w/ Division 88, North Platte, Neb.; Holiday.
General Secretary-Treasurer Russ Bennett—International Office: Supervision of BLE Financial depts.; Records Dept.; BLE Job Bank; General chairmen's mtg., Cleveland; Holiday.
Vice-President Paul T. Sorrow—Assisted General Chairman Speagle in reaching a wage/rules agreement on the Wheeling & Lake Erie Railway Co.; Assisted the Norfolk Southern General Cmtes. in reaching a tentative wage/rules settlement to resolve disputes growing out of Section 6 Notices served by the parties on or after Nov. 1, 1999; Attended mtg. of National General Chairman's Assoc.; Assisted Grand Trunk General Committee in handling numerous issues; Assisted CSX General Cmtes., attended mtg. between GC Menefee and International President; Assisted GC Speagle in handling issues between Divisions 273, 659, 642 and 54 in Buffalo, NY; Attended mtg. of Div. 463 and Division banquet, CSX.
Vice-President Joseph A. Cassidy Jr.— General office duties; National Rail Passenger Corp., Philadelphia; Mtg. w/ Amtrak GCofAs, Cherry Hill; Mtg. w/ SEPTA; Mtg. w/ SEPTA GCofA; Prepare for SBA 933; Study & paperwork; Mtg. w/ Springfield Terminal Rwy.; Public Law Board 6145; St. Lawrence & Hudson Rwy. mtg. w/ GCofA, re: contract negotiations; Holiday.
Vice-President & U.S. Nat'l Legislative Representative Leroy D. Jones—Washington D.C. Office; RR subcommittee; Mtg. w/ Jack Wells, staff member, House T&I cmte.; Publications Cmte mtg.; Receptions Cong. Gephardt (D-MO); AAR holiday reception; Democratic Club Holiday; Mtg. w/ BMWE, TWU, ATDD; FRA technical review cmte., locomotive inspection; BLE Div. 75 Christmas party; Recption for Jean Elliott Brown, Democratic candidate, 16th dist., Fla.; Mtg. w./ CSX, re: locomotive air conditioning and sanitation; FRA locomotive crashworthiness cmte.; Mtg. w/ VP Gore; Tony Coehlo campaign chairman; Donna Brazil, Campaign manager; Don Fowler, former DNC chairman; AFL-CIO political dir. mtg.; Holiday.
Vice-President William C. Walpert—ID Office; BLE Education & Training Dept.; Internal Organizing, Mobilizing & Strategic Planning Dept.; BLE Safety Task Force; BLE Special Reps.; UP Town Hall Meetings, North Platte, Neb., Cheyenne, Denver, Little Rock; NTSB mtg.; KCS; Div. 569 mtg., Heavener, Okla.; Vacation.
Vice-President Edward W. Rodzwicz— General office duties; UP/SP project, mtg. w/ District Coordinators, Div. contacts, state legislative chairmen and BLE-UTU members; NS Eastern region; Assignment per President Dubroski; General Chairmen's mtg.; Mtg. in North Platte w/ President Dubroski, FVP McCoy, SR J. Tolman and BLE-UTU members; Vacation.
Vice-President Don M. Hahs— BNSF system including MRL, UP South & West, Sp east & south, SSW, DLGW, Tacoma Belt, Pac Harbor Belt; Mtg. w/ BNSF Fulsa/ Aliance ID service; General office duties; Nat'l. Wage/Rule meeting; BNSF Section 6 notices mtg.; G.C. Assoc.; BNSF on-property Section 6 wage/rule mtg.; UP South PLB 6170, GC Slone, Neutral Quinn; Holiday.
Vice-President Richard K. Radek— International Office; BLE Decertification Helpline services; Director of Arbitration Dept; National Railroad Adjustment Board (NRAB); General Assistance, WC, grievance settlement conf.; UP/CNW, NRAB archives research; IHB/IC, Arbitration prep., misc.; METRA general assistance; WC seniority roster finalization; Various NRAB arbitration; BRC arbitration prep.; FRA Part 240.409.
Vice-President Dale McPherson — I&M Rail Link; CP/SOO, UP East Lines; TRRA-St. Louis; Indiana Railroad Co.; PLB 5681; PLB 5997; PLB 6040; MNA contract negotiations w/ GC Murphy; IRR negotiations, GC C.L. Roy; Arb. award 5721 mtg. w/ M. Prester; IMRL contract negotiations; Vacation.
Vice-President & Canadian Director Gilles Hallé—Ottawa Office; RCTC negotiations, Calgary; EFAP mtg.; Mtg. w/ Pierre Lafevre, HRDC; Press conference, re: CN/BNSF; Holiday.
Vice-President & National Legislative Representative-Canada T. George Hucker—Ottawa Office; Canadian National Legislative Board; BLE/CPR LTD trustee mtg.; Meeting w/ ST-NLB; Mtg. at the International re: Work/Rest; Mtg. w/ Terry Burtch, Transport Canada; NLB executive committee mtgs.; BMWE-International Rail Safety Conference Paper; Holiday.

Panel to decide fate of crafts

NMB Panel

Continued from Page 7

and an Adjunct Professor of Law at Georgetown University. Bloch is a member of the Federal Mediation and Conciliation Service, the American Arbitration Association and the National Mediation Board.

He is also a member of the American Bar Association, the Michigan Bar Association, the District of Columbia Bar Association and the Industrial Relations Research Association. He is the vice-president of the National Academy of Arbitrators.

Bloch has worked as an arbitrator with many industries, including: broadcasting, sports, steel, aluminum and auto. He has published several books and many articles.

Richard Kasher is the panel member whom BLE members may be familiar with. Kasher resides in Bryn Mawr, Pa. He received his B.A. from Queens College, his Juris Doctorate from Boston University and his L.L.M. from New York University.

He has worked with the National Football League, the airline industry, the hotel and restaurant industry, the communications industry and many others.

All three have worked extensively in the transportation industries. •

Rail retirees meet in Trenton, NJ

An invitation has been extended to railroad retirees from the Pennsylvania Railroad, Amtrak, Conrail, Reading Railroad, and New Jersey Transit, to meet with other retirees who get together on a regular basis for snacks and conversation.

According to retiree Alfred S. Nalbone, BLE Division 373, the group meets at 2 p.m. on every third Wednesday of each month at the Bromley Inn, 1616 Nottingham Way, Trenton, N.J.

For more details, contact Brother Nalbone at (609) 585-1452, or write: 5 Dodge Dr., Trenton, NJ 08610-1901. •

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