CALIFORNIA PUBLIC UTILITIES COMMISSION
CONSUMER PROTECTION & SAFETY DIVISION

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PERSONAL ELECTRONIC DEVICE USE ON RAIL TRANSIT SYSTEMS

REPORT FOR R.08-10-007

PREPARED BY THE

CONSUMER PROTECTION & SAFETY DIVISION

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Richard W. Clark
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INTRODUCTION

This proceeding (Order Instituting Rulemaking, or OIR) considers Commission Resolution SX-88 and whether its temporary restrictions and other measures should be adopted permanently. Resolution SX-88 is an interim emergency ruling restricting cell phone and other personal electronic device use by rail transit operating employees.[1] The Commission adopted Resolution SX-88 in response to several serious railroad and rail transit accidents involving cell phone use.

The Commission's Consumer Protection and Safety Division staff (Staff) prepared and circulated a proposed new General Order, including additional measures, to permanently and more effectively restrict cell phone and personal electronic device use by rail transit employees. Also, Staff held a workshop on July 9 and 10, 2009, to discuss this subject with rail transit and transit worker representatives. On July 24, 2009, Administrative Law Judge Kim issued a ruling seeking party responses to a series of questions. The parties filed their responses by August 13, 2009. On October 22, 2009, ALJ Kim issued a ruling requesting this staff report.

This staff report presents key evidence and reasons for further Commission action. Cell phone or personal electronic device use by rail transit operators or railroad engineers distracts their attention and leads to costly accidents. Also, a wide range of performance testing by psychology, traffic engineering, and human factors researchers demonstrates that cell phone or device use causes a significant distraction of attention or lack of situational awareness leading to actual accidents or accident-prone behavior.

Based on the research, accident evidence, public policy, and the Commission's statutory responsibility for rail transit safety oversight in California, Staff recommends that the Commission adopt the proposed new General Order on a permanent basis. The proposed General Order is attached to this report.

[1] The Commission adopted Resolution SX-88 on September 18, 2008. It was written to restrict cell phone and device usage by both railroad and rail transit personnel. However, on October 7, 2008, the Federal Railroad Administration (FRA) restricted cell phone and device usage by railroad personnel. The new FRA rule, known as Emergency Order 26 (EO 26), became effective on October 27, 2008. EO 26 applies only to railroads, and SX-88 now only applies to rail transit systems. This report addresses whether SX-88 and other cell phone restrictions should be adopted permanently for the rail transit operations.

NEED FOR COMMISSION ACTION

The California Legislature has delegated rail transit safety oversight to the Commission. Distractions caused by rail transit worker cell phone or personal electronic device use create unacceptable risks to public safety. The Commission has the responsibility to address safety risks on rail transit systems in California.

Serious cell phone-related rail transit accidents have occurred in spite of Rail Transit Agency (RTA) rules prohibiting such use. Serious accidents continue to occur and operators have been observed using cell phones since SX-88 was adopted.

Neither labor nor the RTAs have evidenced any significant expense resulting from compliance with Resolution SX-88. On the other hand, it is clear from accident experience and human performance research that the safety benefits of effectively prohibiting personal cell phone use by train operators are substantial and manifest.

No other safety oversight agency has asserted the authority or has exercised any authority to prohibit cell phone or personal electronic device use on rail transit systems in California.

The Commission should adopt the recommended General Order to permanently, more effectively, and more comprehensively protect employees and the public from the dangers of personal electronic device use by rail transit employees in safety-sensitive positions.[2]

[2] This report employs mostly primary sources, but time constraints have required the additional use of some secondary sources. All significant information is cited to enable the interested reader to consult any of the references, as desired.

JURISDICTION

The Commission has the authority to issue this prohibition against the use of personal electronic devices by safety-sensitive rail transit personnel under California Public Utilities Code Sections 778, 29047, 30646, 100168, and 99152, infra.

CPUC Jurisdiction: Specific Rail Transit Agencies

RTAs in operation prior to January 1, 1979, have specific Code sections addressing Commission jurisdiction. Examples of these jurisdiction-conferring statutes include PU Code Section 29047 for BART, Section 100168 for the Santa Clara Valley Transit Authority, and Section 30646 for the Los Angeles County Metropolitan Transportation Authority.[3]

Section 29047 provides, in pertinent part, that:

> "The [BART] district shall be subject to regulations of the Public Utilities Commission relating to safety appliances and procedures, and the commission shall inspect all work done pursuant to this part and may make such further additions or changes necessary for the purpose of safety to employees and the general public. The commission shall enforce the provisions of this section….."

Section 100168 is identical to the above-redacted portion of Section 29047. Thus, it provides for the Commission's rail transit safety jurisdiction over VTA, the Santa Clara Valley Transit District (San Jose). Section 30646 does likewise for the Los Angeles County Metropolitan Transportation Authority, adding that it: "… shall [also] be subject to the jurisdiction of the Public Utilities Commission with respect to safety rules and other regulations governing the operation of street railways."

CPUC Jurisdiction: All Rail Transit Agencies

California Public Utilities Code Section 778 provides that:

> "The commission shall adopt rules and regulations, which shall become effective on July 1, 1977, relating to safety appliances and procedures for rail transit services operated at grade and in vehicular traffic. The rules and

[3] The Los Angeles County Transportation Authority is the successor to the Southern California Rapid Transit District (the original statutory target agency) and the Los Angeles County Transportation Commission. The change-over took place February 1, 1993.

> regulations shall include, but not be limited to, provisions on grade crossing protection devices, headways, and maximum operating speeds with respect to the speed and volume of vehicular traffic within which the transit service is operated. The commission shall submit the proposed rules and regulations to the Legislature not later than April 1, 1977."

For transit guideways, Section 99152 provides that:

> "Any public transit guideway planned, acquired, or constructed, on or after January 1, 1979, is subject to regulations of the Public Utilities Commission relating to safety appliances and procedures. The commission shall inspect all work done on those guideways and may make further additions or changes necessary for the purpose of safety to employees and the general public. The commission shall develop an oversight program employing safety planning criteria, guidelines, safety standards, and safety procedures to be met by operators in the design, construction, and operation of those guideways. Existing industry standards shall be used where applicable."

The Commission has adopted the rules and regulations concerning transit safety, for example, General Order (GO) 26-D establishing clearances as to side and overhead structures, parallel tracks and crossings, GO 95 setting forth, among other things, safety requirements for overhead electric/catenary lines, GO 118 providing for the construction, reconstruction and maintenance of walkways and control, of vegetation adjacent to rail tracks, GO 127 providing for the maintenance and operation of automatic train control systems for RTAs, GO 143-B addressing the design, construction, and operation of light rail transit systems, and GO 164-D providing safety oversight for all rail fixed guideway systems under these statutory provisions. The CPUC continues to oversee the applicability, along with other pertinent regulations, with updates of these General Orders. Finally, the CPUC has been identified by the Federal Transit Administration (FTA) as the State Safety Oversight Agency (SSO) for transit systems in California under Title 49 C.F.R. part 659. As an SSO, the CPUC is required to execute certain federally mandated oversight responsibilities.

Conclusion: Commission Has Jurisdiction to Adopt the Recommended New General Order

No party has contested the Commission's jurisdiction to adopt the proposed General Order. The Public Utilities Code gives the Commission the jurisdiction and authority to adopt the proposed General Order.

SCOPE

Applicability

The recommended new General Order would apply to all rail transit operations in California. Currently, the Commission oversees the safety of these rail transit systems:

BART: San Francisco Bay Area Rapid Transit District

MUNI: San Francisco Municipal Railway (San Francisco MTA, or "Muni")

MTA: Los Angeles County Metropolitan Transportation Authority [4]

SDTI: San Diego Trolley, Inc.

SRT: Sacramento Regional Transit

VTA: Santa Clara Valley Transportation Authority

NCTD: North (San Diego) County Transit District ("Sprinter" Light Rail)

Angel's Flight: Los Angeles' downtown funicular

POLA: Port of Los Angeles (Waterfront Red Car Line)

SFO: San Francisco International Airport ("AirTrain")

The Grove Trolley (Los Angeles)

Americana at Brand Trolley (Glendale)

The General Order would also apply to any new rail transit operations that may begin operations in the future.

Recommended Action Is Within Proceeding Scope

Commission Order Instituting Rulemaking

This proceeding began with the Commission's Order Instituting Rulemaking (OIR) on Commercial Mobile Radio Service and Device Use in Rail Transit Vehicle Operations, Rulemaking 08-10-007. The scope of this OIR is, in pertinent part,

[4] Successor to the Southern California Rapid Transit District and the Los Angeles County Transportation Commission, effective February 1, 1993.

"…to determine whether the temporary measures adopted in Resolution SX-88 or other measures restricting personal use of electronic devices by rail transit personnel should be adopted on a permanent basis." The Commission adopted Resolution SX-88 on September 18, 2008, as an interim emergency order to restrict personal use of Commercial Mobile Radio Services (CMRS) and devices (i.e., cell phones, satellite phones, pagers, personal communications services) by certain railroad and rail transit employees."[5]

Resolution SX-88

Resolution SX-88 prohibited the "Personal use of commercial mobile radio services and devices by on-duty railroad engineers, brakemen, conductors, or rail transit vehicle operators… except for personal communications which take place while the train or transit vehicle is stopped and with approval of the appropriate management personnel."[6]

Present Applicability of Resolution SX-88

Subsequent to the Commission's adoption of SX-88, the Federal Railroad Administration (FRA) adopted its Emergency Order 26 (EO 26) dealing with this matter insofar as railroads under its jurisdiction. EO 26 was adopted on October 7, 2008 and became effective October 27, 2008. As the Commission noted in the instant OIR, EO 26: "… should make Resolution SX-88's and this Rulemaking's prohibitions on CMRS use by such railroad personnel unnecessary." The FRA's regulation covers the nation's interstate freight and passenger railroad network, including railroads in California such as Union Pacific Railroad, Burlington Northern Santa Fe Railway, Amtrak, Caltrain, and Metrolink, among others.

Resolution SX-88 continues in effect today, on an interim basis, for rail transit operations. Distinct from *railroad* operations, *rail transit* operations consist of interurban rail transit vehicle systems whose operations at the federal level are addressed by the Federal Transit Administration, not the FRA. Typical examples of rail transit systems include BART, Muni, and San Diego Trolley, among others as listed above.

As stated in the OIR, this proceeding considers the permanent adoption of the prohibitions in SX-88 as well as any other measures to address safety regarding rail transit employees' use of personal electronic devices. Staff's proposed action, a new General Order with more comprehensive measures, is within the OIR's stated scope.

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[5] The scope is further elaborated at pages 5 and 6 of the OIR.

[6] Reference is made to the OIR, and its footnote number 6 in particular, for the statutory definitions of the subject communications services. Generally addressed are mobile data services, mobile paging services, mobile telephony services, and mobile satellite telephone services, "as well as any other services included by the Federal Communications Commission in their annual CMRS Reports."

CELL PHONE RELATED ACCIDENTS

Rail Transit Crew Cell Phone Use Is a Serious Safety Hazard

Cell phone or personal electronic device usage has been involved in many serious transportation accidents. This safety problem appears to grow as cell phone/device use increases. The problem extends to rail transit lines, passenger trains, freight trains, automobiles, buses,[7] trucks, marine vessels, and airplanes.[8]

Five significant rail transit or railroad accidents are summarized below. All of these accidents prominently featured cell phone or other personal electronic device use.[9] These accidents demonstrate the substantial public dangers caused when operators of large, heavy, and fast-moving multiple-occupancy vehicles engage in cell phone or other personal electronic device use instead of attending to safety-critical duties.

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[7] The National Transportation Safety Board has recommended banning motor coach and school bus drivers from using cell phones while driving those vehicles, except in emergencies. This recommendation resulted from a November 14, 2004, bus accident in Alexandria, Virginia where the driver steered his 12-foot-high bus into a lane with overhead clearance of only 10 feet 2 inches. The bus roof was destroyed and 11 students onboard were injured. "The bus driver had been talking on a hands-free cell phone... and… said he saw neither the warning signs nor the (overhead) bridge itself before the impact." NTSB Item SB-65, November 21, 2006. Available at http://www.ntsb.gov

[8] Recently, the pilots on Northwest Flight 188, in the highly publicized "distracted flying" case, were "…using their laptops to work out crew schedules … while flying past their destination of Minneapolis." "The pilots acknowledged losing track of time and space for 91 minutes while air traffic controllers … tried vainly to reach them…" Associated Press. "Northwest Pilots Prompt Look at Distracted Flying" October 28, 2009. Available at: http://news.yahoo.com/s/ap/20091028/ap_on_go_ca_st_pe/us_northwest_flight_overflown.

[9] Many accidents have multiple causes or contributing factors. The reader is referred to the cited official accident reports or other accounts for complete discussions of these matters. Official accident reports usually identify as many causes or contributing factors as possible. This maximizes the potential for preventive, corrective, or alleviative action(s). This staff filing presents summaries of several serious rail accidents where cell phone or device use was especially prominent. These serve well to illustrate the safety problem. There are many additional serious transportation accidents which have involved cell phone or device use.

SFMTA Train Collision

This accident injured sixteen people and significantly damaged the two involved trains. The responsible train operator was using his cell phone proximate to his train's impact with the preceding train.[10]

At approximately 2:03 p.m. on Saturday, June 14, 2008, a one-car San Francisco Municipal Transportation Agency (SFMTA or "Muni") "T-Third line" light rail vehicle (LRV) train ran into the rear of a stopped two-car N-Judah line" train.[11] This accident occurred on King Street, between 3rd and 4th Streets, in San Francisco. Both trains were on southbound schedules on the same track. Both were in active service, carrying passengers, and operating in manual mode. Manual mode requires operators to maintain safe distances between trains by controlling their speed and by observing wayside signals and stop signs.

The trailing T-Third train failed to stop at an "XX" mandatory stop sign, and instead accelerated.[12] It then failed to stop at a red "STOP" signal, and ran into the rear of the stopped N-Judah train. The N-Judah was properly stopped in compliance with the 4th and King signal. In the process, the moving train also exceeded the 5 mile per hour speed limit applicable to trains at this location.

Sixteen people were injured in this rear-end collision, including the operators of both trains. Thirteen people were transported to area hospitals, where they were treated and released. Both trains suffered extensive damage, with total repair costs estimated at $1.4 million.

SFMTA's rules prohibit cell phone use while operating trains. This prohibition also includes emergency conditions. Dedicated two-way radios are provided for the operators to communicate any train emergencies to other SFMTA personnel.

The operator stated that he was not using his cell phone at the time of collision, but only carried one in case of personal emergency. However, a video clip of him emerging from his train cab showed a cell phone at his ear. He explained that his first action after the impact was to call his union steward, and that this was the call captured on the video recording.

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[10] Fatigue and other factors were also present.

[11] See California Public Utilities Commission, "Collision of Two San Francisco Municipal Transportation Agency Light Rail Vehicles in San Francisco, California (on) June 14, 2008: Accident Report. Issue Date: February 20, 2009.

[12] The Bar "XX" sign is used by Muni, along with signals, to signify an absolute (mandatory) stop. An absolute is a red signal which a train is not allowed to pass, until it gets a "proceed" signal. A proceed signal indicates that the block of track ahead is unoccupied. A train also can proceed past an XX sign if flagged to do so by an authorized individual, such as a Muni street supervisor or train controller.

CPUC staff subpoenaed the operator's cell phone use records. These records indicated that the operator was engaged in four separate cell phone conversations while operating the train between 1:12 p.m. and 1:26 p.m. The records also showed an internet download commencing at 1:55 p.m., just eight minutes before the collision. The records did not indicate the duration of this connection to the internet. A witness stated that the operator was using his cell phone at the previous stop at 2nd and King Street. This stop is immediately prior to the accident site.

The immediate causes of this collision were the T-Third train's excessive speed and running past the two stop indicators. The accident report concluded that the operator's cell phone use contributed to this accident.[13] The report noted: "Train operator cell phone use may cause inattentiveness." The report recommended, among other measures, that SFMTA augment or strengthen its existing prohibition of train operator cell phone use.

SRTD Wayside Maintenance Worker Fatality.

This accident fatally injured a Sacramento Regional Transit District (SRTD) wayside maintenance worker. A SRTD train hit the employee while he was engaged in his duties lubricating the tracks. The train operator was using her personal cell phone proximate to the impact.[14]

At about 1:22 p.m. on Thursday, July 24, 24, 2008, a SRTD train struck and killed a SRTD wayside maintenance worker just east of the "Watt/I-80 West Station" in Sacramento.[15] The train was operating in service with passengers onboard. It consisted of two cars and was running in its normal "manual mode." It had no reported defects. The accident occurred during daylight and clear weather.

The worker entered the right-of-way through a fence-opening and was facing eastward, away from the Watt/I-80 West Station. He stepped between the rails and began lubricating the track with a hand-operated grease gun. Within about three seconds, the train struck him from behind. The train had just left its stop at the Watt/I-80 West Station. The train reached 30 miles per hour in its 12 seconds (262

[13] Additional contributing factors were identified, including a lack of regular systematic operating rules and compliance testing by Muni management, a lack of uniform signage across the Muni rail system, and operator fatigue.

[14] Other factors present included inadequate SRTD safety protection procedures, and the wayside worker's choice of an inadequate "level of protection" informing train operators of his presence.

[15] Adapted from California Public Utilities Commission: Collision of Two San Francisco Municipal Transportation Agency Light Rail Vehicles in San Francisco, California (on) June 14, 2008.

feet) of acceleration before impact.[16] The train continued to travel for about 15 seconds after the accident.[17]

The operator brought the train to a stop using ordinary braking.[18] As the train was decelerating, the operator radioed SRTD Control stating that she had, "Run over something."

The train operator engaged in a considerable series of cell phone calls and text messages, both sending and receiving, while operating the train. She sent, received, or checked over 30 messages, both at and between station stops. She made four outgoing calls, including one exceeding 51 minutes. She answered four incoming calls, sent eight text messages, received three text messages, and called her voice-mail twice. She called her voicemail while operating the train on its way from the preceding Marconi/Arcade Station to the Watt/I-80 West Station. She then received two text messages while at Watt/I-80 West, just seconds prior to the accident.

The accident report identified as a probable cause of this accident the "…train operator's inattention to duties from use of her personal cell phone while operating the train."[19]

The report made a series of recommendations including measures designed to strengthen SRTD's wayside maintenance worker protection procedures. Recommendation No. 7 provided that: "SRTD should develop a zero-tolerance program for cell phone use while operating a train and implement an internal oversight program to detect train operators engaging in cell phone use."

Boston MBTA Train Collision

On Friday, May 9, 2008, a Massachusetts Bay Transportation Authority (MBTA) train hit another MBTA train that was stopped waiting to enter Boston's Park Street Station. This accident injured 100 people, with 49 taken to hospital. The operator of the moving train was using his cell phone, and this distraction was identified as the cause of this accident.[20]

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[16] Time is based on the train's event recorder.

[17] Ibid.

[18] That is, she did not use "emergency stop" braking.

[19] Additional probable causes included SRTD's inadequate safety protection procedures, the victim's choice of an "inadequate level of protection," the requirement for him to simultaneously attend to work and approaching trains, etc. A number of contributing factors were also noted, one of which was: "inadequate supervision of train operators including insufficient rules compliance testing."

[20] As of this writing, November 2, 2009, this accident reportedly remains under investigation by the National Transportation Safety Board. Information on this accident is taken from news report: Lindsay, Jay. "Cell phone ban may follow Mass. trolley crash," Associated Press May 9, 2008, and the additional cited sources.

This accident happened about 7:20 p.m. in a tunnel between the Boston Green Line's Park Street and Government Center stations. A two-car train was stopped at a red signal, waiting to enter Park Street Station, when another two-car train rear-ended it. "The operator (of the moving train) said that he noticed … the red (stop signal) lights … but it was too late … he applied the brake and; (his) train struck the other (stopped) trolley,"[21] said MBTA General Manager Daniel Grabauskas.

> "Officials described a chaotic scene – with metal strewn about, passengers in disarray, and some people who had to be removed from under twisted metal using saws and evacuation equipment. … Both trolleys derailed and sustained significant damage...."[22]

The operator of the moving train reportedly admitted (to police) that he was sending his girl friend a text message at the time of the crash. The MBTA General Manager confirmed this: "The operator of the striking train was interviewed at the hospital by two detectives. During that interview, he admitted he was texting at the time of the accident."[23]

MBTA policy at the time of this accident did attempt to restrict train operator cell phone use. MBTA raised the penalty each time a worker was caught using a cell phone on board. The penalties ranged from a three-day suspension to termination. That policy, with those penalties, did not stop the cell phone use, however. Eighteen subway train, bus, or trolley operators were disciplined for using cell phones on board MBTA vehicles in the year from May 2008 to May 2009, including one termination.

After this accident, MTA announced a new policy with a much stricter penalty rule. MTA will now fire a worker the very first time he or she carries a cell phone on board. "Train operators were already banned from texting, but [this] crash has triggered an even tougher new policy…If train drivers are caught with a cell phone while working, they will be fired."[24] [25]

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[21] WCVB News Report: Trolley Driver Was Texting Girlfriend At Time of Crash. May 8, 2009. www.thebostonchannel.com.

[22] Boston Globe. "MTBA: Conductor in Boston trolley crash was texting his girlfriend." May 8, 2009. www.boston.com.

[23] WCVB News Report, op. cit.

[24] WCVB News Report. "NTSB Still Investigating Crash." May 11, 2009: www.thebostonchannel.com.

[25] On November 13, 2009, a MTA driver was reported "…suspended and facing termination after being caught sending a text message while operating a Green Line trolley. Spokesman Joe Pesaturo says the employee was suspended without pay Thursday and will be the third MTA worker fired under the agency's zero-tolerance texting policy." Boston Globe newspaper. November 13, 2009.

Burlington Northern Head-On Train Collision

On May 28, 2002, two Burlington Northern Santa Fe (BNSF) trains collided head-on the railroad's Red River Valley Subdivision near Clarendon, Texas. One crewman was killed from injuries sustained during the post-accident recovery work, and three were injured. The accident ignited a large fire. The total damage to locomotives and equipment exceeded $8 million. One of the train engineers was using his cell phone instead of attending to the requirements of the track warrant authority, under which train movement was governed. In violation of the railroad's dispatcher's instructions in the track warrant, the engineer failed to stop and hold his train at a designated "safe point." Instead, he proceeded at speed onto the wrong track, the one with the approaching train.

BNSF's Fort Worth, Texas dispatcher issued a track warrant via radio to a long 116 car freight train identified as "Engine BNSF 8876 East."[26] This train was loaded with coal from the Powder River Basin and was en-route to a power plant in Oklaunion, Texas. In essence, the dispatcher told the train conductor to have his train "stop and hold" on the main line short of the east end of the Ashtola Siding (a side track) until another train, "Engine BNSF 4385 West," arrived on the siding and passed by. This would have kept train 8876 sitting safely at rest on the main line while train 4385, an intermodal train with 34 rail cars, proceeded safely through the area on the unobstructed side track.

The conductor read the track warrant back to the dispatcher, thereby confirming that the orders were correctly received. This was about 3.2 miles before the designated stop-and-hold point. Train 8876 was travelling at about 48 miles per hour. There was sufficient time for the train engineer to bring his train to a safe stop at the designated hold point -- if he had begun slowing it within a minute or two of the dispatch order. A train's conductor is the "on-board" supervisor of its crew. Among other tasks, the conductor usually handles the radio communications. The train's engineer operates the train, including throttle and brake operation. The conductor relays applicable dispatch orders to the engineer. If the engineer fails to brake a train when required, the conductor is authorized to step in and stop the train.

Unfortunately, the engineer was placing a cell phone call at the time of the dispatcher's orders. The engineer continued on his personal telephone conversation with a sick relative for ten minutes. Neither the conductor nor the engineer could remember later exactly what happened next. The NTSB presumed the conductor copied down the dispatcher's instructions and gave them in writing to the engineer.

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[26] This means a BNSF train with Engine Number 8876 in the lead, proceeding eastward. This form of train designation helps operating crews correctly identify trains - the engine numbers being prominently displayed in large contrasting colors. So, if a dispatcher tells one train to wait for a certain other train to arrive or pass by, the crews can be certain they are fulfilling the order properly when they see a train with the correct engine number pass them by..

That would have been normal protocol.[27] The conductor usually gives a copy of each track warrant to the engineer and the engineer may then place it on the control panel in front of him.

The conductor might normally also discuss or explain the order as he hands it to the engineer. On this occasion, the NTSB could only surmise that the conductor probably did not discuss the "stop and wait" order with the engineer because the engineer was on the phone. The engineer continued his cell phone conversation and failed to stop the train. The conductor did not take action himself to stop the train, in spite of also having such responsibility.[28]

The coal train engineer was critically injured. The conductor was hurt during the post-accident recovery work. The coal train's lead engine was destroyed, with its cab section separated from the frame and "crushed into an unrecognizable shape." The second engine on the coal train was also severely damaged. The first 23 cars of the coal train derailed and were destroyed. The intermodal train's engineer was fatally injured when struck by the post-accident derailing equipment. His conductor sustained only minor injuries. The intermodal train's lead locomotive was destroyed along with its first three cars. The economic losses from this collision totaled $8,125,652.

When this accident occurred, there was no federal regulation against an engineer using a cell phone while operating a train.[29] However, the *General Code of Operating Rules* (GCOR) provided that railroad employees were not to use unauthorized electronic devices while on duty.[30] The General Code is used by many railroads in the western United States, including the BNSF.[31]

Yet, the coal train's engineer was on a personal cell phone call when his conductor received the track warrant. According to the NTSB,

> "The only known departure from what must have been a routine conveyance of track warrant information …[from] the conductor … [to] the engineer was

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[27] Federal regulations prohibit an engineer from copying a track warrant himself while he is at the controls of a moving train.

[28] *General Code of Operating Rules* (GCOR): Rule 6.1 required the conductor to warn the engineer that the train was approaching the end of its track warrant authority and thus would have to stop. The rule also required the conductor to stop the train himself if the engineer failed to do so. The GCOR are used by many railroads in the western United States, including the BNSF.

[29] Title 49, Code of Federal Regulations, Part 220 governs railroad communications. Subpart B deals specifically with radio and wireless communications.

[30] General Code of Operating Rules: Operating Rule 1.10.

[31] The BNSF did not have its own rule prohibiting cell phone use at the time of this accident. It adopted one in response to another, earlier accident very shortly after this accident. See *below*.

> the engineer's placing of a cell phone call. The call was initiated at about the same time the track warrant was received, possibly producing a significant dual-task diversion of the engineer's attention during the time he would have been expected to read the track warrant. … (I)t is likely that he proceeded beyond Ashtola [his designated "stop and hold" point] with absolutely no knowledge of the oversight. The Safety Board concludes that the engineer's cell phone use likely distracted him to the extent that he did not take proper note of the after-arrival stipulation [that he should stop and hold his train for the arrival and safe passage of the other train, before proceeding] imposed by Track Warrant 22, and thus was unaware of the need to prepare to bring his train to a stop." [32]

As the NTSB explained,

> "When used by either the engineer or (the) conductor, a cell phone may distract the other crewmember or terminate normal interaction between the two. Perhaps one employee may wish to ask a question or offer a reminder but chooses not to disturb the employee who is using the phone. An incoming phone call may be a significant distraction to a person who is engaged in a critical task at that particular moment. It is conceivable that both the conductor and the engineer could be on their cell phones at the same time. In this case, neither employee is fully concentrating on the safe operation of the train."
>
> "In other situations, particularly in passenger operations, an engineer may be alone in the cab. In this case, the sole occupant of the locomotive may be impaired by the demands of a cell phone call."
>
> "In …(this BNSF)…accident, … the engineer placed a cell phone call and continued his conversation during the time he should have been preparing his train to stop, providing convincing evidence that cell phone use by train operating crews can interfere with crewmember attention and communications and can therefore degrade the safety of train operations."

The NTSB went on to recommend that the FRA "Promulgate new or amended regulations that will control the use of cellular telephones and similar wireless communications devices by railroad operating employees while on duty so that such use does not affect operational safety."[33] After a subsequent accident between a passenger train and a freight train in 2008 (described below), on October 7, 2008,

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[32] The NTSB added that it "…cannot be known why the backup system – in this case, the conductor – failed to take action when the primary system – the engineer – did not perform as expected…."

[33] National Transportation Safety Board. "Collision of Two Burlington Northern Santa Fe Freight Trains Near Clarendon, Texas (on) May 28, 2002." Railroad Accident Report NTSB/RAR-03/01. Adopted June 3, 2003.

the Federal Railroad Administration restricted cell phone and device usage by railroad personnel. The new FRA rule, known as Emergency Order 26 (EO 26), became effective on October 27, 2008.[34]

The BNSF adopted its own new rule on June 10, 2002, just a few days after the Clarendon accident, but in response to another, earlier accident. The BNSF prohibited its engineers from using cell phones or laptop computers while operating its locomotives. [35]

Metrolink/Union Pacific Head-On Train Collision.

The Commission cited this railroad accident in its Order instituting this proceeding. This accident has been referred to as "the worst in modern California history."[36] This accident contains significant similarities to the accidents described above – including its prominent cell phone involvement.

On September 12, 2008, a Metrolink passenger train collided head-on with a Union Pacific freight train in the Chatsworth neighborhood of Los Angeles' San Fernando Valley. The accident resulted in twenty-five fatalities, 135 injuries, and significant train damage.

Metrolink train No. 111 was running an afternoon commute schedule when it left Chatsworth Station with three passenger cars. It travelled westbound with 225 people onboard. The train ran a red light (stop) signal before colliding head-on with an oncoming Union Pacific freight train. The freight train engine "embedded into" the front Metrolink carriage and both trains derailed. One of the Metrolink passenger cars was turned on its side.

A large fireball arose at the point of impact. A Los Angeles Fire Department captain described the scene as "total destruction…chaos." Some 250 fire personnel and 200 police were required to handle the rescue efforts, fire suppression, and accident recovery.

Normal procedure would have been for the Metrolink train to pull into a siding at Chatsworth Station to allow the Union Pacific train to safely pass on the main line.[37]

The National Transportation Safety Board found that the Metrolink train engineer was text-messaging on his cell phone about the time he ran through the red "stop" signal. He was in the regular habit of using his cell phone on board. He sent and

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[34] The NTSB also recommended a modification of the "stop and hold" rule.

[35] BNSF Special Rule 6.10.

[36] Los Angeles Times. "Federal Inquiry Finds Rail Oversight Woefully Inadequate." March 4, 2009.

[37] Los Angeles Times. "'Total Destruction': At Least 17 die in head-on Metrolink Crash. September 13, 2008. Note: The fatality total later reached 25.

received some 350 messages during his train duty hours in the several days before the crash.

The Union Pacific conductor was also accustomed to staying in touch with the outside world while on duty. On the day of this crash, he sent and received 41 text messages on his cell phone, including 35 while his train was in motion.[38]

As consequence of this accident, Congress mandated that "computerized crash-avoidance train technology" be installed nation-wide within six years. This mandate is described in detail in a parallel CPUC proceeding, OIR 08-11-017.

As a consequence of this accident, Metrolink installed video cameras on all of its locomotive cabs, including both externally- and internally-directed units.[39] The internally-directed cameras are to monitor the train crews. This installation is opposed by the train workers' union. See Section 8 of this report for a further discussion of this subject.

Conclusion: Public Safety Requires the Proposed Action

Cell phone or personal electronic device usage by train crews poses substantial public safety risks. The five serious accidents described above illustrate the broad scope of these dangers. Four of these accidents involved trains colliding with other trains. Two of these were head-on train collisions. One accident saw a train operator accelerate from a station stop and, in clear weather and daylight, strike and fatally injure a transit agency worker who was maintaining the track immediately ahead.

A very high number of human lives are at risk when passenger-laden trains collide with other trains or have other serious types of accidents. Twenty-five people died from the Metrolink/Union Pacific head-on collision, and 100 persons were injured in the MTA rear-end collision. There is also the risk of significant property damage, sometimes running into many millions of dollars. The five example accidents illustrate these risks.

In all of these accidents, the train operators or engineers did not seem to consciously "see" or "perceive" even the most obvious indications or warnings of danger --

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[38] The NTSB found several additional problems associated with the accident, including unauthorized "ride-alongs" in the locomotive cab (the Metrolink engineer had previously permitted a "rail fan" onboard), an apparent failure to confirm signal colors, and marijuana use by a Union Pacific crew member.

[39] Metrolink trains operate in "pull mode" and "push mode." In pull mode, the locomotive is in front pulling the train with the engineer occupying the locomotive. In push mode, the locomotive pushes the train from behind with the engineer operating the train from the front car, which has a control compartment. Metrolink has installed inward-directed cameras in the locomotives, but not the car control compartments. It has ordered new controlling push mode front cars, which will come with inward-directed cameras installed.

whether these were clearly-present and operative “stop” or “red” signals, “stop and hold” train orders, a fellow employee working on the tracks right in front of the train in broad daylight, or even the presence or approach of other trains. From every available account, all of these hazards should have been easily “seen” -- with the train operators taking appropriate actions to avoid or reduce the risks or severity of the accidents.

This insufficient awareness of the immediate surroundings is unacceptably risky when one is charged with the safe operation of any moving vehicle, and especially a train carrying passengers. Instead of concentrating on the primary work duty of safe train operation, these train engineers or operators were focused elsewhere through their cell phones. While focused on their personal telephonic conversations or text messaging, these operators did not respond, or did not respond appropriately or in a timely manner, to danger signals that should have enabled them to prevent, avoid, or abate the severity of, the accidents.

The above five example accidents illustrate well that cell phone or device use by train operating crews poses unacceptable risks to the public.

CELL PHONE DISTRACTION RESEARCH

A wide range of research has established that cell phone or personal electronic device use by operators or drivers of moving vehicles distracts them, increasing the risk of accidents or accident-prone driving behavior. Several of the key studies are described below, including laboratory vehicle-simulator tests, "in-actual-use" or "camera in vehicle on-the-road" tests, accident records analyses, and even "brain imaging" research. All of these together indicate the same thing, that cell phone or personal electronic device use is counter-indicated for safe vehicle operation.

Cell Phone Use Causes Distraction or Loss of Alertness to Safety Hazards

That a person cannot pay close attention to several different tasks at once is self-evident. Even though "multi-tasking" may sometimes have productivity benefits in situations with non-safety-critical tasks or responsibility, it demonstratively is inappropriate for complex, safety-critical activities, where constant attention, vigilance, and quick reaction times are necessary.

> "A driver is distracted when they pay attention to a second activity while driving. People cannot always safely multi-task in this way, especially if the second activity is time consuming or complex. The second activity puts extra demands on the driver, which may reduce his or her driving standard. For example, it may cause the driver to become less observant or to make worse decisions about how to control the vehicle safely. This lower standard of driving means that a driver is more likely to fail to anticipate hazards, and means accidents can occur due to the distraction."[40]

The National Highway Traffic Safety Administration (NHTSA) conducted a sizeable study in 1997, entitled: "An Investigation of the Safety Implications of Wireless Communications in Vehicles."[41] The study examined cell phone usage patterns, crash data relating to cell phone use while driving, police crash reports, and some human factors relating to the subject. The NHTSA concluded, among other things, that cell phone use while driving increases the risk of crashing, and that

[40] The Royal Society for the Prevention of Accidents. "Road Safety Information: Driver Distraction." December, 2007. Available online at http://www.rospa.co.uk

[41] National Highway Traffic Safety Administration, November 1997. Available at: http://www.nhtsa.dot.gov/people/injury/research/wireless/

accident frequency would likely increase with the growth of cell phone use. As the report put it, "… it logically follows from the above that if more cellular telephones are in use, then there will be more opportunity for distraction and, hence, there will likely be an increase in related crashes…."[42] The NHTSA called for expanded data collection of the problem, improved consumer education, and more research and development, among additional measures.

Conducted in the early years of cell phone usage, the report called for further data, and shied away from recommending an outright ban on cell phone use. Nevertheless, it did identify the problem of cell phone use causing distraction or "attentional impairment" with consequent safety risks or dangers.

The report's recommendations for "educational measures" are especially illuminating. The recommendations explicitly recognized the dangers caused by cell phone use while driving. The NHTSA said:

> "Educational materials should be developed and disseminated to educate the driving public on *the hazards of driving while distracted during cellular telephone use...* These materials would inform drivers of *the subtle influences of cellular telephone use while driving (e.g., loss of situational awareness even though lane-keeping is good*). They could illustrate driving conditions where cellular telephone use is particularly ill-advised. Cellular telephone etiquette could be taught that provides guidance on how to politely refuse, postpone, or abruptly halt a conversation when driving conditions demand it. *Drivers could be taught to recognize signs of 'attentional impairment' in other drivers as part of defensive driving*…These types of educational and outreach materials would sensitize the driving public to issues of distraction while driving and provide them with useful strategies to cope with such hazards."[43]

The relationship between cell phone use, decreased attention to hazards, and high crash risks was repeatedly documented in the ensuing years.[44] Numerous studies

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[42] NHTSA Report, p. 15.

[43] NHTSA Report, p. 16. (*emphasis added*)

[44] Cf: Alm, H. and Nillson, L. (1995). "The Effects of a Mobile Telephone Task on Driver Behavior in a Car Following Situation." Journal of Accident Analysis and Prevention, *27*, 707-715; Brown, I.D., Tickner, A. H., and Simmonds, D.C.V. (1969). "Interference between Concurrent Tasks of Driving and Telephoning." Journal of Applied Psychology. *53*, 419-424; Haigney, D. and Westerman, S.J. (2001). "Mobile (cellular) Phone Use and Driving: A Critical Review of Research Methodology. Journal of Ergonomics, *44*, 132-143; McKnight, A.J. and McKnight, A.S., (1993). "The Effect of Cellular Phone Use on Driver Attention." J. Accident Analysis and Prevention, *25*, 259-265; Redelmeier, D.A. and Tibshirani, R.J.(1997). "Association between Cellular Telephone Calls and Motor Vehicle Collisions." New England Journal of Medicine, *336*, 453-458; and, Violanti, J.M. (1997). "Cellular Phones and Traffic Accidents." Public Health, *111*, 423-428.

have found that driver cell phone or device use causes distraction or loss of alertness to the safety hazards of moving vehicle operation.

The negative effects of personal electronic device are demonstrated on different performance measurements. Variation can be observed in how well a test subject controls his vehicle, including how the subject monitors its various displays and gauges, maintains a safe or approved speed, and keeps an automobile in its lane, and other necessary controlling movements. This performance can be measured either in a moving train or vehicle, as with onboard sensors and cameras, or in a laboratory with a "driving" or "train operating simulator," or by other means.

Variation can also be observed in how the subject reacts or responds to a stimulus or danger warning. For example, whether the person reacts at all or appears totally oblivious to the danger, whether he reacts but with a measurable delay and maybe still rear-ends the vehicle in front of him, and/or whether his reaction is appropriate to the situation.

A third way of observing variation is with a recall test – can the operator, at a later time, remember having seen the danger signal or safety hazard, or some aspect of it, or nothing about it at all. For example, responses could include, "I remember seeing something," "I remember seeing a signal," "I remember seeing a red signal."

Accident reports and traffic statistics can also be analyzed. All these measures lead to a range of terminology in the literature, such as "attentional deficit," "situational inattentiveness," "distracted driving," "conscious unawareness, "response impairment," and more. For our purposes, however, these variations are usually without major importance. What is of primary significance is that train operators' use of cell phones or personal electronic devices is shown to be associated with serious public safety risks.

A 2003 Harvard study estimated that cell phone distractions were causing 2,600 annual traffic deaths and 330,000 accidents resulting in moderate or severe injuries.[45] Notably, the number of cell phones in use has only increased since then. Differing research designs and measurement methodologies can lead to differing numerical results, but the clear overall import is that cell phone use causes distraction and accidents.

In a 2006 study of 1300 drivers, researchers found that fully one-fifth of all vehicular crashes were caused by distraction.[46] A lower figure had been measured

[45] Cohen, J.T. and Graham, J.D. "A Revised Economic Analysis of Restrictions on the Use of Cell Phones While Driving." Journal of Risk Analysis (2003). 23(1):5-17.

[46] McEvoy, S.,P., Stevenson, M.R., and Woodward, M. The Impact of Driver Distraction on Road Safety: Results from a Representative Study in Two Australian States. J. Injury Prevention 2006; 12:242-247.

for just police-reported crashes by themselves, 9.5%.[47] A higher figure for distraction contributing to accidents was found in the "100 Car Naturalistic Study" of 241 American drivers. Over the course of a year, the drivers covered some 2,000,000 miles. They were involved in 15 police-reported crashes, 67 non-reported crashes, 761 near-misses, and 8,395 other 'incidents.' The study found that 78 percent of the crashes and 65 percent of the near-crashes had one form of inattention or distraction as a contributing factor, including cell phone use and inattention due to fatigue.[48] These reports measure results that are more broadly or narrowly defined and they differ in size and location of study and methodologies. Their finding all converge to evidence a significant relationship between cell phone/device use, driver distraction, and accidents or safety risks to the public.[49]

Even "Hands-free" Cell Phone Use Can Be Distractive, Dangerous.

The NHTSA also examined the "hand-held" versus "hands-free" cell phone question. The 1997 NHTSA report said:

> "Legislative proposals have been introduced in some States that prohibit the use of cellular telephones that require the driver to manually operate or hold the phone. These legislative initiatives seem to be based on the assumption that hands-free cellular telephones are acceptable while driving, but hand-held cellular telephones are not. Hands-free designs should reduce the demands on the driver associated with dialing, holding, reaching for or picking up a handset. This in itself might be seen as a clear and unequivocal safety gain. However, *hands-free designs will do nothing to mitigate the distraction potential of cellular telephone conversation*. Proposed legislation may inadvertently promote greater use of cellular telephones among drivers who currently limit or altogether avoid cellular telephone use while driving by implying that hands-free designs must be safe, thus increasing exposure to other potential risks that may still exist."[50]

Thus, even as early as 1997 the distraction risks associated with the hands-free modality of driver cell phone usage were in evidence.

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[47] Gordon, Cl. "What do Police Reported Crashes tell us about Driver Distraction in New Zealand?" Australasian Road Safety Research Policing Education Conference, 2005. This study was conducted in 2002 and 2003.

[48] Neale, V., et al., "An Overview of the 100-Car Naturalistic Study and Findings." Available at: http://www.-nrd.nhtsa.dot.gov/pdf/nrd-12/100Car_ESV05summary.pdf.

[49] See also: Mack, A. and Rock, I., Inattentional Blindness. Cambridge, MA: The MIT Press, 1998, pp. 13-15, 227-250.

[50] NHTSA Report, p. 18. (*emphasis added*)

The dangers of driver distraction while using "hands-free" cell phones were re-studied over the ensuing years. The cognitive demands of conversation are not eliminated by the use of a hands-free telephone device.[51] A 2001 study found that cell phone conversations made drivers more likely to miss traffic signals and react more slowly to the signals they did detect. "Equivalent deficits in driving performance were obtained for users of both hand-held and hands-free cell phones."[52] Indeed, the problem can even be greater with hands-free phones if, as can often occur, their intelligibility is less than that of hand-held units.[53]

Hands-free phones were included in a 2005 NHTSA/Virginia Tech study.

> "…(R)esearchers from the Virginia Tech Transportation Institute watched 100 drivers for a year. They found that cell phone use precipitated many crashes and "near misses." The researchers used cameras and sensors to track activities inside a vehicle, recording crashes, near crashes, and evasive maneuvers. The study showed such events and maneuvers were often preceded by the driver being distracted by the use of a cell phone or other electronic device. There were nearly 700 incidents involving such wireless devices. … The researchers … concluded that using a cell phone while driving is a major cause of traffic accidents, and that hands-free devices have little safety benefit."[54]

Another study by the Insurance Institute for Highway Safety (IIHS) found "…a fourfold increase in injury crash risk consistent across groups of drivers … (including both) … drivers using hand-held and hands-free phones." Subjects were 500 drivers treated in hospital emergency rooms for injuries suffered in crashes from April 2002 to July 2004."[55] According to the IIHS,

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[51] Brown, I.D., Tickner, A.H., and Simmonds, D.C.V. (1969), "Interference between concurrent tasks of driving and telephoning." Journal of Applied Psychology. *53*, 419-424.

[52] Strayer, D.L., and Johnston, W.A. (2001). Driven to Distraction: Dual-task Studies of Simulated Driving and Conversing on a Cellular Phone. *J. Psychological* Science, *12*, 462-466.

[53] Matthew, R., Legg, S., and Charlton, S. (2003) "The Effect of Cell Phone Type on Drivers' Subjective Workload During Concurrent Driving and Conversing." Journal of Accident Analysis and Prevention, *33*, 451-457.

[54] National Highway Transportation Safety Administration., News report: "Feds Say Hands-Free Cell Phone Use Ineffective – Cell Phone Use Contributes to Crashes." June 10, 2005 at www.consumeraffairs.com/news04/2005/cell_hands_free2.html.

[55] McEvoy, S., et al., "Role of Cellular Phones in Motor Vehicle Crashes Resulting In Hospital Attendance." *British Medical Journal*, available at www.bmj.com. See also Insurance Institute for Highway Safety, News report. "Crash Risk Four Times Higher When Driver Is On the Phone." July 12, 2005 at www.consumeraffairs.com/news04/2005/iihs_handheld.html. This study was conducted in

> "The results suggest that banning hand-held phone use won't necessarily enhance safety if drivers simply switch to hands-free phones. Injury crash risks didn't differ from one type of reported phone use to the other. This isn't intuitive. You'd think that using a hands-free phone would be less distracting … But, we found that either phone type increased the risk."[56]

In 2008, a British study revealed "…that mobile telephone conversations impair drivers' visual attention to such a degree that it can add over 5 metres to the braking distance of a car travelling at 60 miles per hour, and causes almost twice as many errors as drivers driving without the distraction of a mobile phone conversation." The study also found that hands-free phone usage involving a more passive style of interaction such as merely repeating words did not measurably degrade driving performance. But, for a more complicated conversational task involving some mental processing of a series of heard words, the study found that drivers' response times dramatically worsened.

> "This suggests that hands free telephone conversations which require people to carefully consider the information they hear and then to make complex cognitive choices based on that information (a business decision for instance) have a particularly significant negative impact on a driver's ability to process and act on the visual information that is critical to their driving performance."[57]

Cell Phone and Drunk Driver Impairment Levels Compared

A further, interesting result was obtained in a 2006 report of driver impairment research.[58] The research itself spanned several years.[59] The impairments

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Western Australia where hand-held cell phone usage was outlawed in July 2001. Nevertheless, one-third of the drivers said their calls had been placed on hand-held phones.

[56] Insurance Institute of Highway Safety News Release. "1st Evidence of Effects of Cell Phone Use on Injury Crashes: Crash Risk is four Times Higher When Driver Is Using a Hand-Held Cell Phone." July 12, 2005, available at www.iihs.org. The report explained that the types of hands-free phones in use were not really completely hands-free (still requiring some physical control even though not hand-held). The researchers did not have sufficient data for the completely voice-actuated devices just coming on the market at about that time.

[57] Kunar, M., Horowitz, T., Carter, R., and Cohen, M., "Telephone Conversation Impairs Sustained Visual Attention via a Central Bottleneck." Psychonomic Bulletin & Review, 2008; 15 (6): 1135-1140. Cf: News Report: "Hands Free Mobile Phone Conversations Add Five Meters TO Drivers' Braking Distances." Science Daily, December 3, 2008, Available online at: http://www.sciencedaily.com/releases/2008/12/081202190857.htm.

[58] Strayer, David.L., Drews, F.A., and Crouch, D.J. (2006). A Comparison of the Cell Phone Driver and the Drunk Driver., *Human Factors: The Journal of the Human Factors and Ergonomics Society,* Vol. 48, No. 2, 381-391

associated with driver cell phone use were compared with those exhibited by drunk drivers. A blood alcohol concentration at the legal definitional level of 0.08% weight/volume was employed with computer-equipped laboratory vehicle-simulator testing.

> "While drivers were conversing on either a handheld or hands-free cell phone, their braking reactions were delayed and they were involved in more traffic accidents than when they were not conversing on a cell phone. By contrast, when drivers were intoxicated from ethanol they exhibited a more aggressive driving style, following closer to the vehicle immediately in front of them and applying more force while braking."

Specifically, the researchers found that: "When drivers were conversing on a cell phone, they were involved in more rear-end collisions, their initial reaction to vehicles braking in front of them was slowed by 9%, and the variability in following distance increased by 24%, relative to baseline." The drunk drivers behaved differently. Their reaction times were not impaired, but they exhibited a more aggressive driving style. The researchers found that drivers

> …followed closer to the pace vehicle, had twice as many trials with times-to-collision less than 4 seconds, and braked with 23% more force than in baseline conditions. … (A)ccident rates in the alcohol condition did not differ from baseline. (H)owever, the increase in hard braking and the increased frequency of time-to-collision values below 4 seconds are predictive of increased accident rates over the long run."

In short, the two groups of drivers were both impaired, with some differences between them and more actual accidents observed with the cell phone users than with the drunk drivers. Both exhibited driving impairments associated with accidents. The researchers saw these impairments as being on a comparable level. Or, as the they concluded: "When driving conditions and time on task were controlled for, the impairments associated with using a cell phone while driving can be as profound as those associated with driving while drunk." [60]

The lead researcher Dr. Strayer later said: "Just like you put yourself and other people at risk when you drive drunk, you put yourself and others at risk when you

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[59] A preliminary report of this research was published in 2003 as: Strayer, D.L., Drews, F.A., and Johnston, W.A., Cell Phone-Induced Failures of Visual Attention during Simulated Driving, *Journal of Experimental Psychology: Applied*. Vol. 9(1), 2003: pp. 23-32

[60] Strayer, David L., Drews, F.A., and Crouch, D.J. (2006). A Comparison of the Cell Phone Driver and the Drunk Driver., *Human Factors: The Journal of the Human Factors and Ergonomics Society,* Vol. 48, No. 2, 381-391.

use a cell phone and drive. The level of impairment is very similar."[61] [62] His colleague Dr. Drews put it this way: "It means that driving while talking on the cell phone is as bad (as) or maybe worse than driving drunk, which is completely unacceptable and cannot be tolerated by society."[63]

More recently, a different study group has questioned whether this "as bad (as) or maybe worse than" language is fully substantiated. Given that cell phone use while driving is not only distracting and dangerous but increasing as well, the new work argues that a full comparability of cell phone and drunken driving impairments would require a showing that cell phone-related fatal accident rates have increased even faster than they actually have.[64]

The first study was a laboratory simulation. The second looked at highway accident data and actual "on the road" driver behavior. The second study's researchers aver confidence that their "naturalistic" methodology is superior to laboratory tests. Even though there may be at least an interpretative disagreement between the two research groups, it remains uncontroverted that both cell phone use and inebriation result in significant driver impairments and safety dangers.

Drivers Impaired By Just Listening to Cell Phone

Recent research indicates that "..(j)ust listening to a cell phone while driving is a significant distraction, and it causes some of the same types of mistakes as drunk drivers make." Using new technology, the researchers found that

> "…brain imaging …document(s) that listening [to cell phones] alone reduces by 37 percent the amount of [parietal lobe] brain activity associated with driving. This can cause drivers to weave out of their lane, based on the performance of subjects using a driving simulator."[65]

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[61] Strayer, David L., as quoted in "Study: Drivers Using Cell Phones as Bad as Drunks." June 30, 2006. at www.consumeraffairs.com/news04/2006/06/cell_phones_distraction.html.

[62] See also: Strayer, David L. and Drews, Frank A. Cell-phone-induced driver distraction. *Current Directions in Psychological Science*. Vol. 16(3), 2007: pp. 128-131.

[63] Drews, F.A. as cited at http://www2.potsdam.edu/mandondj/DrivingIssues/20060830105036.html

[64] Virginia Tech Transportation Institute. News report: "New Insight into Cell Phone Use and Driving Distraction." July 29, 2009. Available at: www.consumeraffairs.com/news04/2009/07/texting_study.html

[65] Just, Marcel, Keller, T., and Cynkar, J. Carnegie Mellon University Center for Cognitive Brain Imaging. News Report: "Drivers Impaired Just by Listening to Cell Phone." March 6, 2008. Available online at: http://www.consumeraffairs.com/news04/2008/03/cells_driving.html. The study itself is available at www.ccbi.cmu.edu. This research methodology of measuring internal brain functions constitutes yet another means of approaching the issue of distracted driving.

The parietal lobe integrates sensory information and is critical for spatial sense and navigation. Activity was also reduced in the occipital lobe, which processes visual information.

The other impact of "driving-while-listening" was a significant deterioration in the quality of driving. Subjects who were "listening" committed more lane-maintenance errors, such as hitting a simulated guardrail, and deviating from the middle of the lane.

> "The clear implication is that engaging in a demanding conversation could jeopardize judgment and reaction time if an atypical or unusual driving situation arose. Heavy traffic is no place for an involved personal or business discussion, let alone texting. … Because driving and listening draw on two different brain networks, scientists had previously suspected that the networks could work independently on each task. But … this study demonstrates that there is only so much that the brain can do at one time, no matter how different the two tasks are. The study emerges from the new field of neuroergonomics, which combines brain science with human computer interaction studies that measure how well a technology matches human capabilities … Every additional input to a driver consumes some of his or her brain capacity, taking away some of the resources that monitor for other vehicles, lane markers, obstacles, and sudden changes in conditions."[66]

It is interesting to note that the same principle also works in reverse. Not only do cell phone conversations distract vehicle operators, but the "attentional demands" of operating a vehicle degrade one's business negotiating performance in cell phone conversations. That is, if individuals to want to maximize the success of their business dealings, they should not attempt to conduct them while operating a moving vehicle.[67] All tasks in complex multi-tasking activities can be difficult to do well.

"Texting" While Driving Likened to Drunk Driving

Given that verbal cell phone use interferes with a driver's ability to operate a vehicle safely, it is not surprising that "texting" does likewise – only worse. Texting

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[66] Carnegie Mellon University Press Release: "Carnegie Mellon Study Shows Just Listening To Cell Phones Significantly Impairs Drivers." March 5, 2008, Available at: www.cmu.edu/archive/2008/March/march5_drivingwhilelistening.shtml

[67] Parkes, A.M. (1993). "Voice Communications in Vehicles." In: A.M. Parkes and S. Franzen (eds.), Driving Future Vehicles, at pp. 219-228. London: Taylor & Francis, publishers.

requires both mental and physical involvement with the electronic device. Texting focuses

the mind, the hands, and the eyes on the device. The dangers of texting while operating a moving vehicle were noted by Marcel Just in the Carnegie Mellon study cited above.

In a British study, researchers determined that texting:

> "drastically reduces an operator's reaction time. … Using a simulator for teenaged and young adult drivers, the study found that reaction time slowed by as much as 35 percent when operators were reading or writing text messages on their cell phones. As a comparison, reaction time was reduced only 21 percent for those who had smoked marijuana and (it) was down only 12 percent for drivers at the legal alcohol limit. The study found that texting reduced a driver's ability to steer the vehicle by 91 percent. Driving high on marijuana reduced it only 35 percent. The test also found that drivers … who were busy texting were less able to maintain safe distances from other cars in traffic."[68]

More recently yet, the Virginia Tech Transportation Institute ran a camera-in-vehicle "on-the-road" series of studies. In all, these studies observed drivers for more than 6 million miles. They found that:

> "…text messaging on a cell phone was associated with the highest risk of all cell phone related tasks … over 20 times worse than driving while not using a phone … (texting) … also had the longest duration of eyes off road time (4.6 seconds over a 6-second interval). This equates to a driver traveling the length of a football field at 55 mph without looking at the roadway."[69] Texting by drivers of heavy vehicles or trucks "… made the risk of crash or near-crash event 23.2 times as high as non-distracted driving." The authors explain their results by noting that "The tasks that draw the driver's eyes away from the forward roadway were those with the highest risk."[70]

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[68] Transport Research Laboratory (Great Britain). News report: "Texting behind the Wheel like Driving Drunk or High – British Study Confirms Texting Reduces Reaction Time." September 19, 2008. Available online at: http://www.consumeraffairs.com/news04/2008/09/texting_drunk.html

[69] Virginia Tech Transportation Institute. News report: "New Insight into Cell Phone Use and Driving Distraction." July 29, 2009. Available online at: www.consumeraffairs.com/news04/2009/07/texting_study.html

[70] Virginia Tech Office of University Relations: "New data from Virginia Tech Transportation Institute Provides Insight into Cell Phone Use and Driving Distraction." July 29, 2009. Available online at: www.vtnews.vt.edu/news_print/index.php?relyear=2009&itemno=571

Conclusion: Public Safety Requires the Proposed Action

As evidenced herein, cell phone/device distraction "negatively impacts" the situational awareness and responsiveness vehicle operators need to keep themselves, passengers, and the proximate public safe. This is manifest from many research studies employing a wide range of testing methodologies or analyses. The proposed General Order would prohibit these significant distractions of rail transit train operators. Public safety requires the proposed General Order be adopted on a permanent basis.

PROPOSED GENERAL ORDER

Staff's proposed General Order is attached to this report. It was first distributed to the OIR service list on September 25, 2009, although as discussed in this report, a few changes have been made following the parties' comments on the proposed regulation.

The major features of Staff's proposed General Order include:

- On-duty possession of personal electronic devices, including many other devices besides cell phones, would be prohibited.
- Possession would be allowed if devices are turned off and stowed away from the person and if video cameras are installed and monitored.
- RTAs would be allowed to issue cell phones if justified for business-use only, if certain protections are instituted such as restricted call lists and records monitoring, if video monitoring is instituted, if explicit agency rules are issued for any use, and if approved by Staff after its review of all required provisions.
- Minimum "zero tolerance" disciplinary consequences for violations would be required including suspension for a first offense, termination for a second offense, and termination for a first offense if the violation is a probable cause of an accident.
- Employees covered would include train operators, on-track machine/vehicle operators, control center employees, and any other employees working on or in the vicinity of the track.
- RTAs would be required to provide notices and training regarding its zero-tolerance policy.
- RTAs would be required to implement and communicate procedures for contacting employees in the event of a personal or family emergency.
- RTAs would have specific monitoring and enforcement requirements, including regular reports to Commission staff.

DISCUSSION

This section deals with several issues or questions in addition to those addressed in the major discussion sections above.

Why a General Order rather than separate Orders for each agency?

General Orders are applicable to all rail transit agencies, thus making it easier and less costly to implement than separate orders for each agency. There are also advantages in having the same standards for all the transit operators to avoid unnecessary confusion and in the case that personnel might transfer to another agency. Even so, the proposed General Order provides some flexibility for the situations of different agencies.

Why a separate or new General Order?

The recommended provisions could be added to an existing Commission General Order. However, a separate General Order is more likely to raise the perceived level of importance of this important regulation, and will make it easier to distribute and understand than if embedded in a broader and longer General Order. And, it is already set forth separately and ready to be adopted.

Why a Permanent General Order?

The proposed General Order is permanent because there is no indication or reason to believe that the problem is temporary, or that rail transit agency rules alone will stop the behavior.[71]

Is there any Duplication of effort?

There is no significant duplication between this General Order and any other applicable regulation. No other cell phone or personal electronic device regulation applicable to of California's rail transit agencies.

[71] There are indications that rail transit agency or railroad rules alone have not been sufficiently effective. For example, at the time of their (cited) accidents, the Boston MTA, the Burlington Northern, and the San Francisco Muni all had rules against cell phone use by employees operating their trains.

Is there any Need for Uniformity with Entities Outside of Transit?

There is no need to achieve a uniform standard with entities outside the rail transit infrastructure. The entities to be regulated by the proposed G.O. are not otherwise regulated in uniform fashion with other transportation sectors or modalities. They operate solely intrastate and do not connect with rail lines or services in any other states. Additionally, they have characteristics unique to rail transit.

There are similar regulations under effect or consideration, most prominently by the FRA for the railroads, and for the airline industry,[72] but the modalities have some differences. Staff believes that strict uniformity between the modalities has not been demonstrated to be necessary. Rather, the differences between the various sectors may permit some unique adaptations in regulation so long as they all are covered by meaningful, effective rules.[73]

Is there Any Experience with the Temporary Rule SX-88?

Given the limited time in which the rule has been in effect, and the lack of close monitoring, evidence for the net effect of the temporary rule is scant and anecdotal. Preliminarily, while the current rule may add benefit as intended, there have been a few instances of documented violation. Staff has at least one photograph of an operator using cell phone while at the controls operating a train. Staff understands that the violation resulted in the operator's termination.

Although the rail transit agencies have reported only one accident involving cell phone use since the temporary rule went into effect,[74] passenger complaints to rail transit agencies suggest that operators continue to use their cell phones in a manner inconsistent with public safety.[75]

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[72] San Francisco Chronicle. "Northwest Pilots Prompt a Look at Distracted Flying." The recent 100+ mile over-flight of the Minneapolis-St. Paul International Airport by device-distracted pilots has led U.S. Transportation Secretary Ray LaHood to declare that: "We're not going to equivocate on this. Any kind of distraction, whether its trains, planes, or automobiles is a distraction and we should figure out ways to get these cell phones, the texting … and the use of laptops out of the hands of people who are supposed to be delivering the public to somewhere safely." October 29, 2009 at p. A7.

[73] As noted above, uniformity within the California rail transit sector is warranted due to the similarities within the sector. Also, there is a benefit of establishing similar expectations for parallel jobs in the rail transit agencies given that personnel do move among them.

[74] Response of San Francisco Municipal Transportation Authority to Administrative Law Judge's Ruling Seeking Parties' Responses, August 20, 2009.

[75] Response of Los Angeles County Metropolitan Transportation Authority to Questions Presented in Administrative Law Judge's Ruling, August 20, 2009.

Prohibit Use of Devices Other than Cell Phones?

Staff recommends the prohibition of all personal electronic devices except those medically indicated such as hearing aids. The use of each prohibited device listed in the proposed General Order demands some sensory attention or processing, whether auditory, visual, cognitive, or tactile, and thus should be prohibited. The proposed General Order would prohibit the use of any new devices that may be produced in the future that are not listed or foreseeable at this time.

Appropriateness of the Proposal

The proposed permanent General Order is an appropriate type of regulatory action, carefully crafted to achieve the necessary safety objective. Rail transit train crewmembers' job duties are usually performed at some distance away from their supervisors. Supervisory oversight is thus often not "present" for these workers. Employees working away from their supervisors may conclude that the probability of being identified as in violation of a "company rule" is relatively low. Additionally, the penalties for violation of a "company rule" could be discretionary or of minor import. Consequences may be perceived as relatively unlikely, or uncritical or minor. In comparison to the ambiguous, probabilistic, and imagined consequences of an identified violation, the perceived concrete, certain, and immediate personal benefits of using an electronic device may be strong and compelling. Each feature of the proposed General Order is designed to provide the perception, and the reality, that the likelihood and magnitude of significant negative consequences for device use will outweigh its perceived personal benefits, as follows:

A total ban on device possession will make it easier to identify violators, and this fact will be evident to all. If a device is seen in an on-duty employee's possession, a violation is established. There need be no discussion of whether it was used, or for what purpose it was used. This clear "ease" of being found in violation will raise compliance with the rule.

A zero-tolerance policy, one with mandatory rather than discretionary penalties, will enhance the perception of the certainty of negative consequences for violation. This will also raise compliance with the rule.

A clear policy of significant penalties for violations will further raise compliance with the rule.

The penalties are tailored to be effective in yet another way. By removing the repeat violator from any further responsibility for rail transit operational safety, the risk of recidivism is eliminated.

If a rail transit agency opts to directly issue such electronic devices, the requirements to install and monitor cameras and to monitor phone/usage records will greatly enhance the perceived likelihood as well as the actual probability of

operators being caught in violation of these rules. These measures will, therefore, further reduce the risk of violation. The additional requirement to implement restricted calling lists or similar technological restrictions will prevent or substantially lessen misuse for personal and otherwise non-compliant purposes. Unnecessary distractions and risks will be reduced in direct relation to the number of personal calls prevented.

Are There Any Significant Fiscal Impacts of the Proposal?

Fiscal impact analysis includes both costs and benefits. The costs of the proposed General Order are negligible. The General Order's standard provision would ban cell phone and electronic device possession by active train crews. Any costs of prohibiting electronic device possession by an operator or other safety sensitive employee would be insignificant.

While camera installation and monitoring would incur costs, they are not mandated by the proposed General Order. No rail transit agency need incur any camera costs so long as it bans cell phone/electronic device possession by its on-duty operating crews in accordance with the General Order's standard rule. The staff believes this should be the usual case. The proposed General Order does permit agencies to allow or continue to allow on-duty train crew possession of cell phones/electronic devices under certain conditions. If an agency opts to do this, it would be primarily for the convenience of the crews while off duty without access to a phone. Additionally, the costs would not be unreasonable in view of the considerable additional benefits of better compliance monitoring and the resultant enhanced safety.

Any minimal implementation costs of the General Order might benefit from an economy of scale since the same regulation, a General Order, applies to all similar agencies. Collective efforts should save each agency implementation time and money. The minimal costs should not affect fares, and if public confidence in rail transit is enhanced because of adoption of the proposed G.O., ridership revenues may even increase.

The fiscal benefits of the General Order are substantial. Recalling the high costs of the accidents associated with train operator cell phone/device usage, if the new General Order is even only partially successful then considerable, meaningful benefits will be realized in the lives and dollars saved.

Summary of Comments Received - July 2009 Workshop

Six rail transit agencies and three labor unions provided comments at or following the staff workshop in July, 2009. These parties expressed concerns with a total ban on cell phone use and possession, citing emergency situations and citing personal use when employees are on breaks away from the trains. The term "on duty" can include employee break periods when, in the view of some, personal cell phone use

should be permitted. All parties said that transit agency contractors should be covered by the rule.

Parties felt that any ban on possessing cell phones or devices should allow for devices that are turned off and stowed away out of sight. Parties felt that requiring the devices to be turned over to supervisory personnel would be undesirable or impractical. Typically, rail transit operating personnel are not in direct contact with their supervisors for much of their work shifts. Rather, the workers are "off on their routes" with their trains. A supervisor is infrequently present at the very beginning and/or end of the duty hours, when any such relinquishing and return of employee cell phones would best occur. In some instances, the supervisors are quartered at a central location or office miles away from the beginning and/or end points of the train routes.

Installation of cell phone/device "call-blocking equipment" was generally opposed at the workshop. The reasons included the possibility the equipment could also block passengers' cell phone calls, the possibility that the equipment "may be violative of Federal Communications Commission (FCC) regulations," and the possibility that call-blocking could be dangerous if other communications channels were inoperative in an emergency. One rail transit agency favored call-blocking equipment. Another agency suggested some sort of "cell phone detection equipment," instead. The labor union opposes call-blocking and cited the FCC question.

Exact enforcement measures remained somewhat uncertain. Enforcement would be much simpler for total bans of on-duty operating personnel cell phone/device possession. If a rail transit agency wishes to permit cell phone possession for any limited types or purposes of use, then enforcement becomes more problematic. Comments ranged from "supervisory responsibility," to "harsh punishment as a deterrent," to possible installation of inward-directed cameras to monitor train operators.[76]

Requiring employees to sign waivers enabling the agencies to access their workers' personal cell phone records also generated a range of responses. There were concerns with "privacy and legal issues." The exact circumstances under which an employer would actually look at an employee's personal cell phone record, if authorized to do so, were also uncertain. And it was observed that some train operators may not acknowledge possessing cell phones, possibly because if doing so would result in having to sign a phone records waiver.

Regarding RTA-issued devices, there was consensus that the rail transit agencies should be allowed to issue, if they wish, agency-owned cell phones or other electronic devices to their workers. Some agencies already issue communications

[76] Installation and monitoring of inward-directed cameras to monitor train operators remain controversial, see below.

devices, whether cell phones or radios, to certain employees. Emergency communications with employees are a necessity at times. The agency should have reasonable rules in place for the operation of these agency-issued devices. Whether any such devices should have certain features like "texting" disabled, was felt impractical or did not meet with general favor. That the agencies could access call records for agency-owned equipment seemed clear, but there was a view that actually checking or reviewing the records on a regular basis might prove impractical.

Cell phones are relatively easy to define. But precisely defining the other electronic devices to be banned or restricted, remained elusive. Comments ranged from support for the OIR's definition, to "any device with an on/off switch," to one asking for a definition explicitly permitting a transit agency's radio communications system. Parties agreed that medically-required electronic devices and adaptive aids should be exempted from any definition of restricted equipment.

While most transits already have means of contacting their employees in emergencies, there appeared to be no real consensus on how outside parties with emergency messages might best reach transit workers, through the transit's central control or dispatcher, or by other means. Some felt that this should be left to each agency to handle in accordance with its own operating system and needs. However, there was consensus that an employer must permit or provide a workable means for emergency communications. The idea was raised that employees with personal cell phone accounts could facilitate incoming emergency communications by recording a message, provided that callers followed the employer's approved means of channeling and recording such calls.

There was little support for a Commission rule holding supervisors responsible for preventing transit worker possession/use of prohibited electronic devices, with some noting that the supervisors already have that duty. Perfect compliance is impossible to achieve, though the supervisors should make the effort.

Opinions varied regarding inward-directed cameras to monitor train crew compliance.[77] "Privacy" concerns were expressed along with some hesitancy about the practicalities of live monitoring versus video tape, and regulations pertaining thereto. Any video tapes would most likely be used, or made available, for any accident and law enforcement investigations. Agencies with cameras stated that their tapes are already used or available for accident and law enforcement purposes.

Most felt that the Commission should not attempt to implement a train "operator certification program," or at least should not do so in this proceeding. On this point, this proceeding was initiated for a narrower purpose and did not include any "operator certification program" as within its scope. A certification program would need to ensure that it included all the most egregious non-compliance behaviors, not

[77] Video monitoring is further discussed later in this report.

just cell phone/device use. If the Commission were to proceed in this direction, it would warrant a separate proceeding focusing on this topic and its many permutations, such as qualifications standards, any possible "grandfathering" of existing employees, what causes would exist for de-certification, who would administer, procedural rules and protections, among others. Hope was expressed that any such Commission regulations would recognize the "unique differences" existing among the rail transit agencies.

The only comments received on whether SX-88 should be made permanent supported the concept, either directly or in the form of a new General Order.

Summary of Transit Agency November 2009 Comments

Administrative Law Judge Kim issued a ruling on October 22, 2009, asking for comments on staff's proposed General Order. These comments were filed by November 12, 2009. Eight transit agencies filed a joint response.[78] The transit labor organizations did not file comments.[79] The agencies' comments include these questions or issues:

1. An assertion that unauthorized cell phone/device use in rail transit is at a "very low level," with an "… even lower level of accidents or incidents associated with such use,"
2. An assertion that the proposed General Order would somehow interfere with the transit agencies on "how … (they) develop policy and communicate with their employees."
3. A preference against requiring installation and monitoring of any inward-directed video cameras.
4. Instead of video cameras, the agencies propose to rely on adoption of a "terminate on first offense" policy[80] to prevent and enforce the cell phone rules.

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[78] The eight transit agencies making this filing were: San Francisco Bay Area Rapid Transit District (BART), Los Angeles County Metropolitan Transportation Authority (MTA), North (San Diego) County Transit District (NCTD), Sacramento Regional Transit District (SRT), San Diego Trolley, Inc. (SDTI), San Francisco International Airport "AirTrain" (SFO), San Francisco Municipal Transportation Agency (SFMTA or Muni), and the Santa Clara Valley Transportation Authority (VTA).

[79] Nevertheless, this staff filing strives to addresses the public -- and transit worker -- safety interests as well. In this effort, Staff also seeks to be fair and reasonable to both labor and management. The proposed General Order also incorporates this objective – as with its allowance for labor and management to work together on aspects like the video camera question.

[80] A "terminate on first violation" policy is a form of penalty or consequence for a train operator who is caught and shown to have violated an anti-cell phone policy. Video

5. The agencies do not support the regulation of cell phone use when the phones are agency-supplied. The agencies would have the Commission only regulate or restrict employee-owned cell phones/devices.
6. The agencies would narrow the persons covered by the proposed Order to: (all) train operators, (all) train controllers, and wayside workers who are "fouling the track." (And, the agencies would wish to define that term themselves, on an agency-by-agency basis.) This differs from the proposed Order by reducing some of the wayside workers coverage, see *below*.
7. The agencies would define the electronic devices in a "non-exclusive" manner. This would be broader than the proposed Order's definition. It would automatically include future new types of devices without the Commission needing to amend the Order. Also, the agencies would regulate "all" use of the covered devices - without regard to a device's manner or purpose of use.
8. The agencies prefer that any new rules adopted in this proceeding be left in the form of an ordinary Commission decision for the present. The rules would later be "folded in" to a pre-existing General Order. They would not, however, be set forth as a new "stand-alone" General Order as recommended by Staff.

1. Accident/incident occurrences:

The agencies assert that the proposed General Order is "…not justified by the demonstrated history of unauthorized … (personal electronic device) use in rail transit and an even lower level of accidents or incidents associated with such use." Staff respectfully disagrees with this assessment. Cell phone/electronic device involvement in transportation accidents/incidents is demonstrably a very critical problem, and inescapably so. Further, it is already quite widespread, and widely understood to constitute a significant public danger – so that much research has been done to elucidate the subject. This research clearly shows us that cell phone/device use causes distraction and verified decrements in operator/driver safety. And, cell phone/device-involved rail/transportation accidents keep recurring. Many of these accidents are extremely serious, with multiple fatalities/injuries and much property

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cameras are a means of actually catching violations in the first instance. Cameras can also provide evidence of the violations, and can be used to assess the extent of the problem and the success of the disciplinary program. "Terminate on first violation" is a penalty policy; while a video camera is a technological substitute for human supervision. The two are therefore not interchangeable - and should not be viewed in this manner. Rather, these two measures could logically be advocated as complimentary components in a larger anti-accident strategy. However, Staff believes that there are some problems inherent in the severity of a "terminate on first violation" penalty policy, as discussed later in this report.)

damage. Staff believes that the evidence warrants taking this issue seriously, such as adopting the proposed General Order.

2. Labor-management relations:

Staff disagrees with the RTAs' assertion that the proposed General Order would intrude on labor-management relations. The proposed General Order does not seek to restrict the transit agencies or the labor organizations in any of their normal employer-employee relations or negotiations. For example, there are no proposed limitations on salaries, health or welfare benefits, pensions, seniority rights, any union security provisions, or working hours. The proposal only addresses the single, narrow issue of cell phone/device use. Even within that narrow topic, it focuses only on safety-sensitive situations and employees.[81]

Further, the proposal is crafted to enable management to permit certain cell phone use even by its train operating crews. The proposal would require a transit agency choosing to allow such phone use to also effectively monitor it. In the usual absence of human supervision on the moving trains, this is simple, minimal prudence. The goal is to effectively prevent misuse. To achieve this public safety goal, there must be an effective mechanism to detect violations.

The alternative would clearly be to simply ban all cell phone/device possession by the train crews. Indeed, that would have been the most intuitive approach. But, staff is not seeking a complete ban. Rather, staff crafted the proposed General Order to facilitate maximal flexibility for the transit agencies and the labor organizations to match the paramount safety goal with their local operational concerns. Staff sees the proposed Order as supporting management prerogatives and constructive labor-management relations in association with appropriate, reasonable, necessary, and precisely- focused safety regulation. The General Order would carefully preserve a maximally responsible level of transit agency policy flexibility to ban cell phones, to permit them in certain circumstances, to issue agency-owned phones/devices, and/or to not issue agency-owned phones/devices.

3. RTA preference against any inward-directed video cameras:

Staff believes that video cameras are a minimal necessity if workers are permitted to possess cell phones/electronic devices while operating the trains. This is because there is ordinarily no supervisory presence and thus no ability to observe the employee conduct in this critical safety-sensitive setting. A supervisor is rarely present in the cab of a train while it is in revenue service. As it would be impractical for a transit agency to assign supervisors to ride along with and monitor

[81] It is difficult to envision any effective safety regulation of any utility's operations that is less intrusive of management's employee relations or communications. If the proposed General Order is found to be objectionable on these grounds, then most all American safety (and other types of necessary or useful) regulations would also have to be set aside.

their operating crews, video cameras are the only feasible alternative in meeting the safety mandate.[82] Without this technological "solution," Staff could not recommend cell phone possession.[83]

The proposed General Order would require cameras only if a transit agency chooses to authorize on-duty cell phone possession by its train operating crews. The Order would not require any agency to permit cell phone use, nor would it mandate any cameras absent such an election by an agency. Staff is unaware of any other reliable monitoring or means of detecting cell phone or device abuses by train cab personnel. Staff believes there must be an effective mechanism of detecting violations that risk the public safety. Therefore, according to this perspective, the proposed General Order's provision for limited video monitoring is a means of providing the agencies with the flexibility to permit this cell phone/device possession. Absent the video, Staff would have to oppose permitting cell phone possession in the train cabs.

4. RTA preference to allow train crews to use cell phones absent video monitoring, in some circumstances - relying instead on a "terminate on first violation" policy

Staff believes that this would be unacceptable from a public safety perspective. As noted, crews normally have no supervisors onboard while they are operating the trains. Video monitoring is a necessary technological "substitute" for the absence of meaningful human supervision. Absent both human and video monitoring, there would be few means for a transit agency to discover violations. Nor would an agency have much of the "evidence"[84] needed for the normally-required due process in securing any penalties, even if the agency somehow found out a violation occurred.

A "terminate on first violation" policy is a form of penalty or consequence for a train operator who is caught and shown to have violated an anti-cell phone policy. Video cameras are a means of actually catching violations in the first instance. Cameras can also provide evidence of the violations, and can be used to assess the extent of the problem and the success of the disciplinary program. "Terminate on first violation" is a penalty policy; while a video camera is a technological substitute for human supervision. The two are therefore not interchangeable - and should not be viewed in this manner. Rather, these two measures could logically be advocated as complimentary components in a larger anti-accident strategy.

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[82] If any cell phone use is to be allowed by on-duty train operating crews.

[83] Inward-directed cameras are a matter of current controversy, at least, where organized labor objects to them -- such as at the Burlington Northern Santa Fe. The proposed General Order merely permits a transit agency to deal with this question within its own particular labor-management matrix, consistent with safety.

[84] Supervisory witness statements or reports, video film of the violations, etc.

However, Staff believes that there are some problems inherent in the severity of a "terminate on first violation" penalty policy. First, there has been no discussion of the needs for or advantages of providing different levels of discipline for different levels of violations, as with inadvertent versus willful violations.[85] It is a widely accepted principle of law that "the punishment should fit the crime."[86] For example, under different provisions, both Staff and the agencies would permit cell phone/device possession when the phone is turned off and properly stowed.[87] If an otherwise-diligent employee simply forgets to turn off a properly stowed and unused device, a "terminate on first violation" policy would still cause his/her dismissal without provision for any discretion or review. There is no correlation between the "across-the-boards" severity[88] of a "terminate on first violation" policy and this type of inadvertent employee mistake.

As attractive as it might seem at first as, perhaps, "a most vigorous regulatory response to a critical public safety problem," a "terminate on first violation" could fail as the desired remedy.[89] The real workday world with its full range of human behaviors and complexity requires a more carefully crafted or nuanced approach.[90]

A "terminate on first violation" policy could well discourage the reporting of violations in some instance. This is one reason why disproportionate penalties are likely of uneven application -- and results. Suppose that an otherwise-stellar employee inadvertently leaves a cell phone on one time, with no actual

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[85] Or in the case of any repeat offenders.

[86] Rather, the violator is made subject to a penalty that is of a civilly-approved nature, and that is reasonably proportional to the harm or risk done to others. This is usually done with some consideration of the actor's intent and the impact of the act. Most modern legal penalties reflect various practical, political, and policy balances. A sufficient while still proportional penalty will normally be afforded broad social support. This helps assure that the law is both obeyed in the usual circumstance and enforced in enforced when broken. Arbitrary laws or laws with penalties that are seen as too harsh will often be met with less social support. This can lead to attendant disrespect and the risk of uneven or unreliable enforcement – and results.

[87] The rule for railroads is similar, FRA Emergency Order 26.

[88] And, some would say: arbitrariness

[89] And, the replacement worker could well be just as prone to this very same, simple human error.

[90] And organized labor may well demand something more clearly in harmony with commonly-accepted jurisprudential and employment standards. It is not difficult to envision legal challenge(s) to a transit agency's imposition of a "terminate on first violation" policy. This could particularly result if the policy were adopted without a good-faith attempt first at less apparently-arbitrary or severe approaches. An effective legal challenge could, of course, result in a delay or even an overturning of the desired safety enhancements.

consequential harms. Might not some supervisors occasionally be tempted to simply "look the other way," rather than taking action destined to require the worker's termination? If so, the "zero tolerance" policy will have become weakened, and could lead to greater discretion being applied. It could lead to "zero tolerance" on some occasions and "zero penalties" on others.

Staff believes that its recommended minimum of a 30-day suspension without pay for a first violation should be an adequately severe, credible penalty to discourage the prohibited conduct.[91] Staff also believes that terminations would be essential for "repeat offenders" where it is clear that an employee is unable or unwilling to comply. The public safety interest requires such people be removed from safety-sensitive employment.

However, with the RTAs' position in mind, Staff recognizes one situation where a first offense may warrant termination. If personal electronic device use is at least partially causative in an accident, this situation carries additional information. While likely to not always be the case, the occurrence of the accident itself will indicate a higher level of risk was taken by the employee – the distraction was sufficient to contribute to an accident. Additionally, discipline after a violation in an accident will be unlikely to incent lenient supervisor discretion. And finally, termination after an accident-causative violation would be consistent with the principle of a penalty proportional to the harm. For these reasons, Staff has modified its proposed General Order to include a provision that would result in the termination of an employee who was to cause an accident at least in part because of a violation.

5. RTA preference to exclude Commission Safety Oversight of Agency-issued Cell phones and Devices

The transit agencies request that the Commission exclude Staff's provisions on agency-issued cell phones and devices from the proposed General Order. The agencies believe that they are " … capable of setting effective restrictions on the use of cell phones, radios, and like devices which are issued for official purposes only."

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[91] Precisely optimal penalties for violations are, admittedly, difficult to proscribe with complete confidence. We have seen that the Boston MTA began with a much lesser penalty, a three-day suspension for first violations, but found that insufficient. Cell phone/device violations and accidents continued, and the MTA is now imposing a "terminate on first violation" policy. Our recommended minimum of a 30-day suspension seeks to strike an effective and reasonable balance between the need for a sufficient penalty with the need for it to be perceptually-fair and actually reliable in application and result. There is room for further discussion in this regard, such as the possibility of a 60 or 90 day suspension on first violation. And as with all General Orders, experience will help guide Staff in recommending any future possible changes in any new rules the Commission may see fit to adopt. For example, on the railroads, the FRA provides for statutory civil penalties with the expectation that the railroads will effectively enforce the rules, per FRA Emergency Order 26.

Staff does not wish to dispute any agency's capabilities. However, Staff does not know what any such agency restrictions would be, or how they would be administered and enforced, and believes that at a minimum, its proposed provisions are necessary.

The only readily available advantage an agency has for detecting and penalizing violations when the instrument is agency-owned is direct access to the billing statements. This is the useful difference from the case of employee-owned phones.[92] But billing records help more "after-the-fact," that is, after violations occur, than it does in assuring prevention of the harm. Staff believes the visible presence of an operative video camera in the train control cab will have a far greater deterrent effect than merely the potential that management may later review its telephone bills.

Additionally, an after-the-fact review of invoices is not without problems. First, determining what calls are actually violations could depend, at least in some instances, on information not available from an invoice, or, on information no longer available to a agency days or weeks after the conduct in question has occurred. Some telephoned numbers would probably stand out right away, such as, if the train operator were in the habit of calling home or the movie theaters. Other numbers might provide less clarity, such as a transit agency office number. Questions remain. Which offices and under what circumstances would calling be acceptable? Would approved calls be limited to some types of calls? How would compliance be ascertained? Might a train operator call headquarters to inquire about, for example, the agency's vacation leave policies, or to sign up for a training class? Also, people normally have friends and even relatives in their own organizations. How would an invoice review identify which type of call was made? This could be a challenge for a transit agency. But we do not have their internal rules or procedures in front of us for evaluation. So, the record is left uncertain.

Additionally, the rules, and therefore the outcomes, could differ from agency to agency. Agencies might find it necessary or desirable to change their rules from time to time, especially if any problems arise. Unless the Commission were to order prospective submission of these agency rules and any future proposed changes, that is, unless the Commission exercised continuing regulatory oversight of these agency rules and their implementation, the record would be left perpetually uncertain.

Some billing statements may not include all of the possible useful data for effective safety oversight. For instance, some telephonic, texting, or internet services are set up as "total calling plans" billed through a flat fee. In these plans, individual calls are not germane to the charges and might not be documented. We understand that sometimes individual calls or texting sessions are not listed, or if they are then the

[92] This issue also arose at the staff Workshop in this proceeding. See the earlier section for that discussion.

invoice may not indicate their duration. For instance, Staff examined the billing records in the SFMTA train collision described earlier. Staff reported that the records failed to reveal the duration of an internet connection call initiated by the train operator just eight minutes before the collision. The investigators had to rely on a fortuitously- available witness statement to establish that the train operator did indeed continue this communication link as his train moved towards its collision. Billing invoices sometimes do not provide all the information required for accurate and effective detection or enforcement of violations.

Some cell phone services do not send bills to their users. Instead, the user pre-pays and may then make as many calls as s/he wishes until the paid balance runs out. The telephone company does not need to invoice calls because it has already collected for the provided services. And these companies can be headquartered anywhere in the world. These types of services add to the uncertainty inherent in the transit agencies' proposal for reliance on billing records. Both detection and enforcement of violations could be compromised.

Regardless of their ownership or billing practices, if any, all cell phones and personal electronic devices are capable of causing dangerous driver/operator distractions, accidents, and injuries. The key issues are their presence and potential misuse in the train cabs or in other safety-sensitive settings. The key issues are not who may get billed or who may later endeavor to review any such invoices.

Such uncertainty is contrary to the goal of this proceeding. Staff believes that the transit agencies' request to, in effect, rely on billing records alone, without benefit of regular supervisory or even video monitoring, is not a desirable path to this proceeding's public safety goals. Rather, Staff believes that the public safety interest in this proceeding favors the proposed General Order's more consistent treatment.

6. Exclude some "Safety-Sensitive Employees" from Coverage by the Order

The transit agencies recommend that the proposed Order's definition of covered personnel be amended to exclude some transit employees in certain circumstances. In particular, the agencies seek to scale back the proposal's applicability to one group of workers. These are people inside the proposed Order's "protected work zone" (within 15 feet of the tracks), but who are still not actually "fouling the track." By "fouling the track," the agencies mean: "…being in such proximity to a track that an individual could be struck by a rail transit vehicle."[93] In essence, the agencies seek to exempt some employees working very close to the tracks, albeit not quite on top of them.

[93] Joint Transit Agencies' Filing of November 10, 2009 at Exhibit A Footnote 2.

The agencies argue that 15 feet is "…not realistic for day-to-day operations." They argue that "On the wayside, when someone is not fouling the track (but within 15 feet of the running rail), a phone/electronic device can be a significant asset to a technician for various reasons (seeking troubleshooting input, ordering parts, calling for additional resources and the like)."

Staff expects that transit agencies instruct their employees to step back away from the rails before making cell phone calls for advice, parts, additional resources, or any other purpose. Staff also expects employees to normally do this. Telephone calls do not ordinarily require a worker to stand with his/her body right up against the rails. Nevertheless, this transit agency comment may still have some merit.

The proposed General Order's 15 foot "protected work zone" is Staff's attempt to achieve the additional clarity of a "defined distance" of protection for the transit workers. Especially when involved in problem-solving call, employees could pace and/or stumble towards the track. Thus, a transit worker would benefit from a clear and prudently drawn "protected work zone" of a defined width.

Staff is concerned about the RTAs setting their own definition for "fouling the track." Each agency would specify a distance out from the running rail. While this should satisfy the "defined distance" issue just discussed, Staff remains concerned whether all of the specified distance(s) would be sufficient to avoid accidents.

Staff recognizes that different RTAs may have different situations with their different configurations. As always with any General Order, a variance may be requested that would then have the force of the General Order. Additionally, the specifics of any variance request would undergo independent safety review.

7. Defining Devices in a "non-exclusive manner"

Staff believes this transit agency proposal has merit, at least in its purpose – to automatically prohibit new devices. However, staff believes its proposed General Order already accomplishes this. Staff's catch-all definition is the same as the RTAs' proposal. Staff's proposal states:

> *Personal Electronic Device* means a wireless or portable electronic device not provided by the RTA for business use. (From the proposed General order, definition 2.8)

The RTAs' proposal states:

> *Personal Electronic Device* means a wireless or portable electronic device not provided by the RTA for business use. (Joint RTA Comments, Exhibit A, footnote 1.)

Both definitions follow with nearly identical examples, but both retain the broad application stated in the first sentence. It should be clear that this definition includes the examples, as well as any new devices.

However, staff's definition also includes the caveat that if an employee finds a way to use the RTA-issued device for personal reasons, it then is the same as using a personal device. Staff asserts that this is a critical provision and continues to support it. [94]

One change, however, may better accomplish both the RTA's and staff's goals for this definition. Staff has changed the words "a wireless… device…" to "any wireless… device…" to ensure the meaning is clear. .

8. A New General Order versus a Commission Decision

Staff continues to favor the proposed new General Order. Merely leaving any new safety regulations in a Commission decision would not communicate their full importance to the transit industry or its personnel. General Orders are intended to be easily available in their entirety and thus are separately printed in greater numbers than most decisions. They are also widely circulated, easily available on the Commission's website, distributed to numerous interested parties, posted to the internet, and discussed with the industry. Regular Commission decisions are not usually afforded these levels of distribution or prominence. A General Order is the usual and available vehicle for safety orders intended to apply throughout California to an entire regulated industry.

The public, the legislature, and the regulated industries and their personnel, all look to the General Orders for rules applying "generally" to a whole industry. Staff sees little justification for publishing this proceeding's safety rules in any other, "less visible" fashion. Staff therefore believes that leaving the new safety rules outside of a General Order for any period of time would be inadvisable, and unjustifiable.

Staff also believes the rules should be set forth as a separate new General Order. The advantages of these new rules being set forth in a new General Order, as contrasted with merely being "folded in later" to a pre-existing GO, were also discussed earlier in this report.[95]

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[94] Please see also the discussion at item 5 in this section, *above*.

[95] A new General Order will also avoid the processing and procedural delays in publication and distribution of trying to "fold the new rules" into an existing General Order. The instant proceeding is set up now to expeditiously issue a new General Order, and Staff continues to reaffirm that this is the preferable way to proceed. Trying to "fold the rules into an existing GO" would have no substantial value. Rather, it could necessitate additional steps consistent with the Commission's Rules of Practice and Procedure. It would involve additional and unnecessary work for the Commission and inherent delays.

Video Monitoring of Train Crews

As described earlier above, Metrolink has installed "inward-directed" train cab video cameras to monitor its operating personnel.[96] These cameras will watch the train crews for compliance with safety rules including FRA Emergency Order 26 and Metrolink prohibitions on cell phone use. "Metrolink Board Chairman Keith Millhouse announced the commuter rail agency's plans to activate inward- and outbound -facing video cameras in all its locomotives. Metrolink will become the first railroad system in the nation – passenger or freight – to install inward-facing cameras … (which) … will provide a significant deterrent to the type of dangerous and inappropriate activity, including text messaging and unauthorized persons in the cab, revealed during the National Transportation Safety Board's hearing on (this) … collision."

The cameras were activated in October 2009.[97] However, on October 20, 2009, the Brotherhood of Locomotive Engineers and Trainmen announced it filed legal actions in California and Federal courts "to halt Metrolink's illegal audio and video surveillance of its members inside locomotive cabs. 'While cell phone use is alleged to have contributed to the fatal Metrolink collision of September 12, 2008, installing video cameras inside the locomotive cabs is an invasion of privacy,' said Paul T. Sorrow, Acting President of the BLFT. 'In fact, video cameras are an ineffective deterrent to cell phone use and there are far less intrusive and less expensive measures readily available that would prevent such use to accomplish Metrolink's purported goal of improving safety.' Instead of video cameras, the union is proposing a cell phone jamming system that blocks all incoming and outgoing cell phone calls and texts, and can alert others of the attempted cell phone use from the locomotive cab."[98]

This Metrolink-BLET dispute reflects an ongoing labor-management controversy over inwardly-directed video cameras in the larger railroading industry. Staff anticipates that the proposed General Order's video option will only be employed by those transit agencies that can implement it successfully, as where there is either no serious challenge to it - or with the agreement of any labor organization(s).

The RTAs ask for the flexibility to adopt other measures than video monitoring. As stated earlier, any regulated entity can apply for a variance, and since alternative

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[96] Metrolink has installed these cameras in their locomotives, but not in their "push-mode" controlling cab compartments. Cameras are being installed in these compartments in the new equipment yet to be delivered to Metrolink. Also, like many other railroads, Metrolink is installing cameras to observe the track ahead of its trains – for trespassers, etc. Such outwardly-directed cameras are not at issue here.

[97] Mass Transit magazine. "Metrolink to Activate Video Cameras in Locomotive Fleet" October 12, 2009.

[98] Brotherhood of Locomotive Engineers and Trainmen. "BLET Acts to Halt Video Surveillance." October 20, 2009. At: http://www.ble.org

devices are yet to be tested, Staff recommends the proposed General Order as drafted. Additionally, staff notes other benefits of video monitoring that the suggested alternative devices will not provide. For example, video monitoring can also detect other distracting behaviors such as conversing with passengers, reading books, newspapers, and other personal printed material, and bringing unauthorized individuals into the control compartment. Recently, for example, Metrolink cameras documented the engineers' actions in a red light violation that only nearly avoided a collision. Metrolink management expressed appreciation for the camera evidence in diagnosing and remediating this dangerous problem.[99]

California Environmental Quality Act

The new rule should not require any installation – it just prohibits device use. Thus it should be exempt from CEQA analysis.

Even if the RTAs opt to install cameras, they should be exempt from a CEQA analysis because any environmental effect should be negligible. First, such camera installation may not trigger CEQA review as a "project," since it will not cause a direct or indirect physical change in the environment.[100] Second, even if it was a project it would be exempt under the "common sense" exemption.

> "The activity is covered by the general rule that CEQA applies only to projects which have the potential for causing a significant effect on the environment. Where it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment, the activity is not subject to CEQA."[101]

And third, it would be exempted under the Class 1 Categorical Exemption, Section 15301 of the CEQA Guidelines:

> "Class 1 consists of the operation, repair, maintenance, permitting, leasing, licensing, or minor alteration of existing public or private structures, facilities, mechanical equipment, or topographical features, involving negligible or no expansion of use beyond that existing at the time of the lead agency's determination. The types of "existing facilities" itemized below are not intended to be all-inclusive of the types of projects which might fall within Class 1. The key consideration is whether the project involves negligible or no expansion of an existing use."

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[99] LA Times on-line. "Another red light probe for Metrolink." December 1, 2009. http://www.latimes.com/news/local/la-me-metrolink-redlight2-2009dec02,0,945235.story

[100] Pub Res Code §21065 and CEQA Guideline §15378(a).

[101] CEQA Guideline §15061(b)(3).

Parallel Proceedings

While there are no other proceedings in progress to develop and implement personal electronic device use on rail transit agencies in California, at least one other state has adopted a regulation. On May 18, 2009, in response to the Massachusetts Bay Transportation Authority (MBTA) accident discussed earlier in this report, the Massachusetts Department of Public Utilities (MDPU) issued an Order commencing a rulemaking and adopting emergency regulations prohibiting the possession or use of a cellular telephone or other electronic devices by MBTA bus, train or streetcar operators.[102]

On July 23, 2009, the MDPU concluded its investigation and issued final regulations prohibiting the use and possession of electronic devices by MBTA operators while on duty.[103] Specifically, the regulations provide that:

> An Operator is prohibited from using or having in his or her possession an Electronic Device while the Operator is on duty and on his or her train, which includes streetcars. The Electronic Device cannot be anywhere on the Operator's person or property, such as pocketbook or other belongings. The Electronic Device cannot be on the vehicle he or she is operating or in any part of a train consist. The Operator cannot give the Electronic Device to another person on the train or streetcar to hold, whether or not that person is a Transportation Authority employee.
>
> The Operator is prohibited from any use of any Electronic Device while on duty, including, but not limited to, telephoning, checking the time, texting, playing games, reading, e-mailing, or listening to music.[104]

[102] Investigation by the Department of Public Utilities on its Motion commencing a rulemaking pursuant to 220 C.M.R. §§ 2.00 et seq. revising 220 C.M.R. § 151.00 and 220 C.M.R. § 155.00, Order Adopting Emergency Regulations, D.P.U. 09-45 (May 18, 2009).

[103] Investigation by the Department of Public Utilities on its Motion commencing a rulemaking pursuant to 220 C.M.R. §§ 2.00 et seq. revising 220 C.M.R. § 151.00 and 220 C.M.R. § 155.00, Order Adopting Final Regulations, D.P.U. 09-45-A (July 23, 2009).

[104] 220 C.M.R. 151.13

It is also notable that on November 5, 2009, the federal Department of Transportation (DOT) and the Federal Communications Commission (FCC) announced a new joint effort:

> "… to evaluate technologies that may help curb the dangerous epidemic of distracted driving. … 'We must put an end to distracted driving, which is costing lives and inflicting injuries across the nation's roads and railways,' Transportation Secretary Ray LaHood told the House … Subcommittee on Commerce, Trade, and Consumer Protection. … LaHood says the next step... will involve the initiation of three rulemakings: One to codify restrictions on the use of cell phones and other electronic devices in rail operations, One to consider banning text messaging and restricting the use of cell phones by truck and interstate bus operators while operating vehicles, And a third to disqualify school bus drivers convicted of texting while driving from maintaining their commercial driver's licenses."[105]

Given the likely delay and uncertainty regarding any enactment of a federal rule, Staff recommends that the proposed General Order be adopted to provide safety in California. Additionally, California has often taken the lead in federal rulemakings, and the proposed General Order, as well as any experience with it once adopted, could provide helpful precedent and experience for the federal proceeding.

[105] Limbach, James. "Federal Agencies Team Up To Combat Distracted Driving." November 5, 2009. Available at: http://www.consumeraffairs.com/news04/2009/11/dot_fcc_distracted_driving.html. The reference to railroad rules to be codified appears to refer to the FRA's Emergency Order 26, discussed above.

CONCLUSION

The distractions caused by rail transit worker use of cell phones and other personal electronic devices present unacceptable public safety risks. This has been demonstrated both by the actual accident history and by academic research. The costs of prohibiting such use are negligible. The benefits are substantial, especially in preventing injuries, fatalities, and significant property damage. The Commission has the mandate for rail transit safety oversight in California, and the responsibility to adopt regulations to protect or enhance the public safety of rail transit operations.

The recommended General Order will permanently, more effectively, and more comprehensively protect employees and the public from the dangers of personal electronic device use by rail transit employees in safety-sensitive positions.

RECOMMENDATION

The Commission should adopt the proposed new General Order on a permanent basis.

Attachment: Draft General Order

GENERAL ORDER NO. _____

PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

RULES AND REGULATIONS GOVERNING THE USE OF PERSONAL ELECTRONIC DEVICES BY EMPLOYEES OF RAIL TRANSIT AGENCIES AND RAIL FIXED GUIDEWAY SYSTEMS

TABLE OF CONTENTS

Rail Transit Agencies (RTA) and Rail Fixed Guideway Systems (RFGS) operating in California must comply with the following rules governing the use of personal electronic devices by employees.

1 GENERAL PROVISIONS

1.1 *Authority.* These rules and regulations are authorized by and implement the provisions of 49 U.S.C. § 5330; 49 C.F.R. § 659; and the California Public Utilities Code, including Sections 778, 29047, 30646, 100168, and 99152.

1.2 *Purpose.* The purpose of these rules and regulations is to eliminate distractions from the use of personal electronic devices by RTA employees performing safety sensitive functions in California. The safety of patrons, employees, and the public is of primary importance in the application of these regulations.

1.3 *Applicability.* These rules and regulations are applicable to all RTAs in California. This rule does not prohibit RTAs from implementing more stringent rules.

1.4 *Additional Rules.* The Commission may make such additional rules and regulations or changes to these rules and regulations as necessary for the purpose of safety.

1.5 *Exemptions or Modifications.* Requests for exemptions or modifications from these rules and regulations shall contain a full statement of the reasons justifying the request. A request must demonstrate that safety would not be reduced by the proposed exemption or modification. Any exemption or modification so granted shall be limited to the particular case covered by the request.

2 DEFINITIONS

2.1 *Business Use* means the use of electronic devices issued by the RTA for tasks essential to the RTA's operations, under the RTA's rules governing such business use.

2.2 *Contractor* means an entity that performs tasks on behalf of the RTA.

2.3 *Employee* means a person employed by an RTA in California, or a contractor working on behalf of such RTA.

2.4 *In-Cab Camera* means a closed-circuit video recording device that is mounted in the cab of the rail transit vehicle which continuously records activities of the operator.

2.5 *Non-Business Use* means use for personal purposes or for tasks other than tasks essential to the RTA's operations, and use in conflict with the RTA's rules governing business use.

2.6 *On Duty* means when an employee begins to work or is required to be ready to work until the time the employee is relieved from work and all responsibility for performing work.

2.7 *Performing Safety Sensitive Functions* means the activities during which an employee who is performing safety-sensitive functions is actually performing, considered performing, ready to perform, or immediately available to perform such functions.

2.8 *Personal Electronic Device* means any wireless or portable electronic device not provided by the RTA for business use. This includes, but is not limited to, wireless phones, personal digital assistants, smart phones, two way pagers, portable internet devices, laptop computers, DVD players, audio players, iPods, MP3 players, games, Bluetooth devices, or any headphones or earbuds of any type, excluding hearing impaired devices. For the purpose of this rule, an electronic device issued by the RTA which is being used for non-business use is considered a personal electronic device for the duration of its non-business use.

2.9 *Possession* means being located on the person or attached to the person. For instance, if the personal electronic device is attached to the belt in a case, or kept in a pocket, or placed on a strap attached to the person, it is in possession of that person.

2.10 *Rail Fixed Guideway System (RFGS)* means any light, heavy, or rapid rail system, monorail, inclined plane, funicular, trolley, cable car, automatic people mover, or automated guideway transit system used for public transit and not regulated by the Federal Railroad Administration or not specifically exempted by statute from Commission oversight.

2.11 *Rail Transit Agency (RTA)* means the entity that plans, designs, constructs, and/or operates a RFGS.

2.12 *Rail Transit Vehicle* means an RTA's rolling stock, including but not limited to passenger and maintenance vehicles.

2.13 *Safety Sensitive Functions* means operating rail transit vehicles or other on-track machines or vehicles; dispatching or controlling the movement of rail transit vehicles; working in or on rail transit vehicles, or on train control, train protection or signaling systems, flag person, lookout or monitor; or any other activity which may result in an employee being on or within 15 feet from the field side of the nearest rail.

2.14 *Stowed* means put away, out of sight, off the person, not attached to the person, and not in anything on the person. Stowed locations include all parts of a vehicle. For example, the personal electronic device may be placed in a duffle bag, cabinet, compartment, or locker, in a manner that does not interfere with the performance of any safety sensitive functions. All earpieces shall be removed from the ear, stowed, and turned off, excepting those hearing aid devices described in 3.2(l).

2.15 *System Safety Program Plan (SSPP)* means a document adopted by an RTA detailing its safety policies, objectives, responsibilities, and procedures.

2.16 *Zero Tolerance* means the RTA's disciplinary actions towards employees who violate this General Order. The RTA's disciplinary actions against employees for violating the zero tolerance policy shall be sufficiently serious, including termination for second offenses, to be reasonably expected to prevent violations of this General Order.

3 PROHIBITED USE AND POSSESSION OF A PERSONAL ELECTRONIC DEVICE

3.1 Train operators shall be strictly prohibited from using or possessing personal electronic devices, and all other employees and contractors of RTAs shall be strictly prohibited from using personal electronic devices while:

- **a.** Operating rail transit vehicles or other on-track machines or vehicles except as exempted in emergency situations as described in 3.7 below.
- **b.** Dispatching or controlling the movement of rail transit vehicles or other on-track machines or vehicles.
- **c.** Working in or on rail transit vehicles, or on train control, train protection or signaling systems.
- **d.** Performing the tasks of a flagperson, lookout, or monitor.
- **e.** While performing other tasks which may result in an employee being on the tracks, or within 15 feet from the field side of the nearest rail.

3.2 Prohibited uses of personal electronic devices include but are not limited to:

- **a.** Conducting an oral communication, placing or receiving a telephone call.
- **b.** Sending or reading an electronic mail message or text message.
- **c.** Playing an electronic device game.
- **d.** Accessing the Internet or reading material viewed from the Internet or other electronic source.

e. Playing, viewing, or listening to a video.

f. Playing, viewing, or listening to a television broadcast.

g. Listening to an audio book; reading electronic written material or book.

h. Playing or listening to a radio broadcast other than a radio broadcast by a RTA.

i. Playing or listening to music.

j. Executing a computational function.

k. Performing any other function that is not necessary for the operation of the RTA, or for the health or safety of the Rail Transit System or RTA's employees, contractors, and/or passengers, or the health and safety of the general public that entails the risk of distracting the employee from a safety critical task.

l. Exempt from this rule are electronic or electrical devices prescribed by a licensed medical practitioner to permit an employee to meet minimum levels of hearing ability as required by the RTA or contractor.

3.3 Control center employees shall have any personal electronic device turned off and stowed when on duty.

3.4 Rail transit vehicle operators shall not have any personal electronic device in their possession.

3.5 Rail transit vehicle operators shall not stow any personal electronic device unless the RTA places in-cab cameras as specified under Section 4.

3.6 All other employees shall have each personal electronic device turned off, and use is strictly prohibited while on the track or within 15 feet from the field side of the nearest rail.

3.7 An employee may be permitted to use a personal electronic device to report a fire or other life-threatening emergency when the RTA-issued communication equipment is not functioning. If operating a vehicle, the vehicle must be stopped before using the personal electronic device.

4 PERSONAL ELECTRONIC DEVICE PROHIBITIONS AND IN-CAB CAMERAS.

4.1 RTAs shall completely prohibit the possession and the stowing of electronic devices by operators unless in-cab cameras are installed and the requirements of Section 7 are implemented.

4.2 RTAs may install and, if installed, shall adequately maintain rail transit vehicle in-cab cameras, which shall be located in the cab and focused on the rail transit vehicle operator during rail transit vehicle operations. If in-cab cameras are installed, operating, and monitored under the provisions of this order, possession of personal electronic devices is always prohibited, but stowing may be permitted.

4.3 RTAs shall provide written notice to Commission Staff whether they will choose to install in-cab cameras in rail transit vehicles, or in lieu of such installation, implement a total prohibition of the possession or stowing of personal electronic devices by rail transit vehicle operators while on duty.

5 REQUIREMENTS FOR RTA-ISSUED ELECTRONIC DEVICES

5.1 RTAs are permitted to issue electronic devices to its employees under the following conditions:

- **a.** RTAs must establish and implement rules, technological restrictions, and monitoring practices that do not conflict with this General Order's rules prohibiting personal electronic device use by employees in safety sensitive positions. At a minimum, the rules, restrictions, and policies must include:
  - **i.** Installation, operation, and monitoring of in-cab cameras under the provisions of this order.

ii. A technological feature that restricts use to only business-necessary functions, such as a restricted call list on a cell phone.

iii. Ongoing random phone-records monitoring to ensure that technological restrictions are not circumvented and to evaluate usage for possible rule and General Order violations. Any such violations shall be reported to Commission Staff.

iv. An annual assessment and evaluation of the safety and business justification for issuing and using the device.

b. RTAs must include their rules, technological restrictions, and monitoring compliance practices in their SSPP.

c. Before allowing use of the RTA-issued electronic device, RTAs must submit for Commission Staff approval their business justification for issuing an electronic device, a safety evaluation, the rules for business use of electronic devices, and the SSPP modifications as they relate to this section.

d. RTAs must implement a zero tolerance policy for employees who use any business electronic device for personal use while performing safety sensitive functions.

6 REQUIREMENTS TO IMPLEMENT A ZERO TOLERANCE POLICY AND PROGRAM

6.1 Each RTA shall implement a zero tolerance policy and program for employees who violate these rules.

6.2 RTAs shall include their zero tolerance policy and program in their SSPP and rail operations rules.

6.3 The RTA's zero tolerance policy and program shall include, at a minimum:

a. A zero tolerance policy statement signed by the RTA's chief executive that endorses the RTA's zero tolerance policy and program.

b. A clear description of the actions the RTA will take to address violations, as well as the process afforded the employee to appeal the violation and discipline.

c. The RTA's disciplinary actions for violating the zero tolerance policy shall be sufficiently serious to be reasonably expected to prevent violations by those performing safety sensitive functions.

i. At a minimum, the RTA shall suspend an employee for thirty (30) days for a first offense

ii. The RTA shall terminate an employee for a first offense if the violation is a probable contributing cause of an accident.

iii. The RTA shall terminate an employee for a second offense.

6.4 RTAs shall provide sufficient notice and training to employees of the RTA's zero tolerance policy regarding personal electronic device use while performing safety sensitive functions. At least every year, a refresher course on RTA's zero tolerance policy shall be provided. Records showing compliance with this requirement shall be maintained for a minimum of three (3) years.

6.5 Each RTA shall post a notice of its zero tolerance policy inside each rail transit vehicle cab and passenger-facing side of the cab door. This notice shall also be placed at all locations where RTA employees report for duty.

6.6 The RTAs shall submit a copy of their zero tolerance policy to staff within thirty (30) days of the effective date of this order and within thirty (30) days of any subsequent modifications.

6.7 The RTAs shall incorporate their zero tolerance policy into their SSPP and submit the SSPP to Commission Staff for approval within sixty (60) days of the effective date of this order.

7 REQUIREMENTS FOR MONITORING AND ENFORCEMENT

7.1 RTAs shall develop, and include in their SSPP, an enforcement and random monitoring program designed to ensure compliance with this General Order.

7.2 RTAs that have functioning in-cab cameras shall randomly monitor video recordings to ensure compliance with this General Order. RTAs shall monitor each train operator's compliance with this General Order a minimum of once every 90 days.

7.3 RTAs shall periodically conduct operational evaluations and inspections to determine the extent of compliance with these rules and regulations.

7.4 RTAs shall file a monthly operational evaluations and/or inspections report on a form prescribed by Commission Staff within 30 calendar days from the last day of the month covered. Records of operational evaluations and/or inspections shall be maintained for a minimum of three (3) years.

7.5 Video recording from in-cab cameras shall be kept for a minimum of 60 days and shall be made available for Commission Staff review upon request.

8 REQUIREMENTS FOR EMERGENCY CONTACT PROCEDURES

8.1 RTAs shall implement procedures by which employees performing safety sensitive functions can be contacted in the event of a personal or family emergency. These procedures shall include, at minimum, the routing of that contact through a designated person or division within the RTA.

8.2 These procedures shall be communicated to all affected employees in writing, and copies shall be available to Commission staff and be included in the RTA's SSPP.

(END OF ATTACHMENT 1)