ORAL ARGUMENT SET FOR APRIL 15, 2004

No. 03-1165

IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

PUBLIC CITIZEN, CITIZENS FOR RELIABLE AND SAFE HIGHWAYS, and PARENTS AGAINST TIRED TRUCKERS,

Petitioners,

v.

FEDERAL MOTOR CARRIER SAFETY ADMINISTRATION and THE UNITED STATES,

Respondents.

On Petition for Review of a Final Rule Issued by
Respondent Federal Motor Carrier Safety Administration

FINAL BRIEF FOR PETITIONERS

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February 27, 2004

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PETITIONERS' CERTIFICATE OF COUNSEL AS TO PARTIES, RULINGS AND RELATED CASES (D.C. CIR. R. 28(a)(1))

Pursuant to D.C. Circuit Rule 28(a)(1) (and Federal Rule of Appellate Procedure 26.1), counsel for petitioners certify as follows:

A. Parties and Amici

Petitioners are Public Citizen, Parents Against Tired Truckers ("PATT"), and Citizens for Reliable and Safe Highways ("CRASH"), national nonprofit membership organizations dedicated to improving truck safety. Pursuant to Federal Rule of Appellate Procedure 26.1, counsel state that none of petitioners has a parent, subsidiary, or affiliate that has issued shares or debt securities to the public.

Respondents are the Federal Motor Carrier Safety Administration ("FMCSA") and the United States.

Distribution & LTL Carriers Association, Truckload Carriers Association, and American Trucking Associations, Inc. have intervened in support of respondents.

Advocates for Highway and Auto Safety and the Insurance Institute for Highway Safety are participating in the case as amici curiae in support of petitioners.

B. Rulings Under Review

Petitioners seek review of the final hours of service rule issued by respondent FMCSA on April 16, 2003, and published in the Federal Register on April 28, 2003, at 68 Fed. Reg. ("FR") 22456 (Joint Appendix ("JA") 1781).

C. Related Cases

The case on review has not previously been before this Court or any other court. Petitioners are aware of two related cases, both in this Court:

1. In November 2002, these same petitioners and Teamsters for a Democratic Union filed a petition for a writ of mandamus and for relief from unlawfully withheld agency action in this Court against the same agency, FMCSA; the Secretary of the U.S. Department of Transportation; and the U.S. Department of Transportation. *See In re Citizens for Reliable and Safe Highways,* No. 02-1363 (D.C. Cir.). That petition sought, among other things, to compel FMCSA to issue a final rule governing the hours-of-service regulations. In February 2003, the parties entered into a settlement agreement resolving the timing of the issuance and effective date of the final hours-of-service rule. This Court has retained jurisdiction over that petition.

2. On October 20, 2003, Edison Electric Institute, the National Rural Electric Cooperative Association, and the American Gas Association filed a

petition for review of this same final hours-of-service rule and of FMCSA's order denying those entities' petition for reconsideration of the final rule. *See Edison Elec. Inst. v. FMCSA,* No. 03-1353. Based on their petition for reconsideration, it appears that the petition for review filed by these utility organizations will raise issues that are distinct from those presented in this case.

Respectfully submitted,

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GLOSSARY

AHAS	Advocates for Highway and Auto Safety
ATA	American Trucking Associations
CMV	Commercial motor vehicle
CRASH	Citizens for Reliable and Safe Highways
DOT	Department of Transportation
EOBR	Electronic onboard recorder
ExR	Report of the Expert Panel
FARS	Fatality Analysis Reporting System
FHWA	Federal Highway Administration
FMCSA	Federal Motor Carrier Safety Administration
FR	Federal Register
GAO	General Accounting Office
GPS	Global positioning system
HOS	Hours of service
ICC	Interstate Commerce Commission
IIHS	Insurance Institute for Highway Safety
JA	Joint Appendix

MCSIA	Motor Carrier Safety Improvement Act of 1999, Pub. L. No. 106-159, 113 Stat. 1748 (1999).
NIOSH	National Institute for Occupational Safety and Health
NPRM	Notice of Proposed Rulemaking
NTSB	National Transportation Safety Board
PARs	Police accident reports
PATT	Parents Against Tired Truckers
PRE	Preliminary Regulatory Evaluation
RIA	Regulatory Impact Analysis and Small Business Analysis for Hours of Service Options
RODS	Records of duty status
Section 408	ICC Termination Act of 1995, Pub. L. 104-88, § 408, 109 Stat. 803 (1995)
SPM	Walter Reed Sleep Performance Model

Petitioners seek review of a final rule governing the hours of service of commercial motor vehicle ("CMV") drivers, promulgated by the Federal Motor Carrier Safety Administration ("FMCSA"). The rule violates congressional mandates that FMCSA revise hours-of-service ("HOS") regulations to reduce fatigue-related incidents and increase driver alertness and that the agency make safety its highest priority.

Far from improving safety, the final rule abandons virtually every principle FMCSA had proclaimed necessary for new HOS rules. Instead of curtailing hours that truck drivers may work and drive, thereby alleviating fatigue and abating the death toll from truck crashes, the rule *increases* the consecutive hours drivers may drive, allowing them to drive 26-28% more hours per week—an increase that will require 58,500 *fewer* long-haul drivers than needed under the old rules to cover the same hours. The rule also permits drivers to partition sleep into unrestful fragments in a sleeper berth; condones noncircadian schedules; fails to require a weekly recovery period for sleep-deprived drivers; ignores the risks of nighttime driving; and perpetuates a system in which most drivers willfully violate HOS limits.

JURISDICTION

Pursuant to Section 408 of the ICC Termination Act of 1995, Pub. L. 104-88, 109 Stat. 803 (1995) ("Section 408"), FMCSA issued its final HOS rule on

April 16, 2003, and published it on April 28, 2003. 68 Fed. Reg. ("FR") 22456 (JA 1781). DOT has authority to prescribe HOS regulations for truck drivers. 49 U.S.C. § 31502. Petitioners, organizations dedicated to promoting truck safety, filed a petition for review on June 12, 2003. This Court has jurisdiction under the Hobbs Act, 28 U.S.C. § 2342(5). *See MST Express v. DOT,* 108 F.3d 401, 404 (D.C. Cir. 1997).

As demonstrated in affidavits filed herewith, *see Sierra Club v. EPA,* 292 F.3d 895 (D.C. Cir. 2002), petitioners participated in this rulemaking and bring this challenge on behalf of their members—many, if not all, of whom are endangered by the final rule.

STATUTES AND REGULATIONS

Pertinent statutes and regulations are in the addendum.

STATEMENT OF ISSUES

Whether FMCSA's hours-of-service rule is arbitrary and capricious or contrary to law because it—

(a) does not establish a 24-hour, circadian work/rest cycle, although FMCSA recognized the profound safety problems with the old rules' noncircadian cycle;

(b) permits single drivers to split into two periods their required 10

"consecutive" off-duty hours, although FMCSA acknowledges that truck drivers need at least 8 hours of continuous, uninterrupted sleep;

(c) raises maximum consecutive driving time from 10 to 11 hours, although FMCSA has recognized that crash risk increases geometrically when drivers drive longer than 8 hours;

(d) permits drivers to "restart" their weekly accumulation of hours after only 34 hours off-duty, dramatically *increasing* permissible weekly driving hours and providing insufficient time off;

(e) fails to require electronic onboard recorders and leaves the issue unresolved indefinitely, despite Congress's mandate that the agency "deal[] with" that issue in this rulemaking;

(f) ignores the statutory requirement that DOT protect the health of truck drivers;

(g) relies on a flawed cost-benefit analysis fundamentally different from that in the notice of proposed rulemaking, without public comment; and/or

(h) fails to satisfy statutory mandates that the rule "reduc[e] fatigue-related incidents and increas[e] driver alertness" and that FMCSA "consider the assignment and maintenance of safety as the highest priority."

STATEMENT OF THE CASE

Section 408 directs FMCSA to issue a final rule

> dealing with a variety of fatigue-related issues pertaining to commercial motor vehicle safety (including 8 hours of continuous sleep after 10 hours of driving, loading and unloading operations, automated and tamper-proof recording devices, rest and recovery cycles, fatigue and stress in longer combination vehicles, fitness for duty, and other appropriate regulatory and enforcement countermeasures for reducing fatigue-related incidents and increasing driver alertness) . . . .

49 U.S.C. § 31136 note. On May 2, 2000, after publication of an advance notice of proposed rulemaking, 61 FR 57252 (1996) (JA 1), FMCSA published a notice of proposed rulemaking ("NPRM"), 65 FR 25540 (JA 921). On April 16, 2003, FMCSA issued a final rule, 68 FR 22456 (JA 1781), which radically departs from the proposed rule.[1]

I. BACKGROUND

A. Existing HOS Rules

HOS limits are common throughout the transportation industry—for commercial airline pilots, railroad engineers, commercial maritime personnel, and truck drivers—and are as fundamental to safe trucking as good brakes, headlights,

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[1] Because long-haul trucks are involved in approximately 67% of all fatigue-related crashes and 75% of all fatigue-related fatal crashes, 65 FR 25546, 25547; *see also* 68 FR 22485, this brief focuses on the rule's impact on long-haul (including regional) drivers.

and tires. Existing regulations, in effect since 1939 and last substantially changed in 1962, were adopted long before there was "a clear scientific understanding of fatigue causal factors (*e.g.,* time of day, amount and timing of sleep, time awake, and time on task)," 68 FR 22458, and are "sorely inconsistent with the best available information today." Report of the Expert Panel, *Potential Hours-of-Service Regulations for Commercial Drivers* (1998) ("ExR") (JA 548).

The old rules permitted truckers to drive 10 hours after 8 consecutive hours off-duty. After being on-duty 15 hours, a driver could not drive without taking another 8 hours off-duty. 49 C.F.R. § 395.3(a) (superseded). The old rules also limited weekly driving. If a carrier did not operate CMVs every day of the week, its drivers were limited to 60 hours on-duty in 7 consecutive days; if the carrier operated CMVs every day, its drivers were limited to 70 on-duty hours in 8 consecutive days. *Id.* § 395.3(b) (superseded).

Since 1962, the rules allowed work/rest cycles as short as 18 hours if drivers maximized driving time. 68 FR 22491; 65 FR 25558. A driver who started driving Monday at 12:01 a.m. would have to stop driving at 10 a.m. After 8 hours off-duty, he could drive again for 10 hours—6 additional hours on Monday (6 p.m.-12 a.m.) and 4 hours on Tuesday (12 a.m.-4 a.m.), for a total of 16 hours on Monday, and so forth. *Id.* 25548. Such "18-hour days" run counter to human

beings' circadian rhythm of just over 24 hours. *Id.* 25554; 68 FR 22460. FMCSA acknowledges that "[t]his alternating day-and-night driving has been proven to be detrimental to a driver's sleep[,] thereby increasing the risk that the driver will cause a crash." 68 FR 22491.

The old rules did not require that drivers take their 8 off-duty hours in one block. Under 49 C.F.R. § 395.1(g) (superseded), drivers could accumulate required rest in a sleeper berth (if each period was at least 2 hours long), staggering shorter driving and resting sessions until they reached weekly limits. Thus, a driver could drive 6 hours, rest in a sleeper berth for 5, drive the other 4, rest the remaining 3 in the berth, then begin again until he reached the weekly maximum. 68 FR 22504; 68 FR 56208, 56209 (2003) (JA 1845).

Such split sleep is commonplace. A recent survey reveals more than 90% of long-haul drivers obtain most of their sleep in sleeper berths. Of drivers splitting their rest, the majority spend 4-5 hours in the berth at once. 65 FR 25550, 25555. Because sleep in short segments is less effective in restoring driving fitness than sleep in one long block, split-sleep patterns are among the strongest predictors of fatigue-related truck crashes. National Transportation Safety Board ("NTSB"), *Factors That Affect Fatigue in Heavy Truck Accidents* (1995) ("1995 NTSB") (JA 63, 73, 82-83, 86, 118). Fatal-truck-crash risk increases three-fold if a driver

obtains 8 hours' rest in two fragments. Hertz, *Tractor-Trailer Driver Fatality: The Role of Nonconsecutive Rest in a Sleeper Berth* (1988) (JA 190).

B. Truck Crashes and Driver Fatigue

Although HOS rules remained substantially unchanged for 60 years, America's transportation system did not. Long-haul truckers in the 1930s averaged 25 miles per hour. The Interstate Highway System led to much higher traffic speeds and volumes, with more—and more severe—large-truck crashes. 68 FR 22472; 65 FR 25541. In 2001, 409,000 large trucks were involved in crashes, 4,793 of which involved fatalities. Truck crashes killed 5,082 people and injured 131,000. Although only 3% of vehicles, large trucks are involved in 8% of all fatal crashes and 12% of all traffic fatalities. *2001 Large Truck Crash Stats at-a-Glance* and *2001 Large Truck Crash Overview,* http://ai.volpe.dot.gov/CrashProfile/NationalCrashProfileMain.asp.

Most victims are not truck drivers. 78% of truck-crash fatalities were in other vehicles; 9% were pedestrians, cyclists, etc.; and 14% were truck occupants. *Traffic Safety Facts 2001: Large Trucks,* http://www-nrd.nhtsa.dot.gov/departments/nrd-30/ncsa/AvailInf.html. In crashes involving large trucks and passenger vehicles, 98% of fatalities were in passenger vehicles. Single-vehicle crashes (*e.g.,* running off the road) caused two thirds of deaths among large-truck

occupants. Insurance Institute for Highway Safety ("IIHS"), *Fatality Facts: Large Trucks* (2002), http://www.iihs.org/safety_facts/safety.htm.

DOT has long acknowledged the major role fatigue plays in truck crashes. At a 1988 symposium, Federal Highway Administration ("FHWA") officials emphasized the contribution of driver fatigue to CMV crashes and suggested the problem was largely attributable to violations of existing limits. Advocates for Highway and Auto Safety ("AHAS") Comments (1997) ("1997 AHAS") (JA 328-30); *see also* DOT, Office of Inspector General, *Motor Carrier Safety Program: Federal Highway Administration* 10 (1999), http://www.oig.dot.gov/item_details.php?item=143. Driver fatigue was voted the #1 safety concern at the FHWA 1995 Truck and Bus Safety Summit, involving over 200 drivers, motor carrier representatives, government officials, and safety advocates. 65 FR 25541.

Precise assessments of the role of fatigue in truck crashes have proved elusive. DOT's principal databases, the Fatality Analysis Reporting System ("FARS") and the General Estimates System, are based primarily on police accident reports ("PARs"), which significantly understate the problem. 65 FR 25545; Preliminary Regulatory Evaluation (2000) ("PRE") (JA 822); 1995 NTSB (JA 39); *accord* DOT, Report to Senate Comm. on Appropriations and House Comm. on Appropriations, *Transportation-Related Sleep Research* (1989)

(JA 132-33); FHWA, *HOS Study: Report to Congress* (1990) ("1990 FHWA") (JA 145).

Several studies nevertheless have attempted to quantify the incidence of fatigue in truck crashes. "Research has suggested that truckdriver fatigue may be a contributing factor in as many as 30 to 40% of all heavy truck accidents." 1995 NTSB (JA 38). A 1985 study found fatigue the primary cause in 41% of 221 crashes. Transportation Research and Marketing, *A Report on the Determination and Evaluation of the Role of Fatigue in Heavy Truck Accidents* (1985) (JA 237). NTSB's 1990 study of fatal-to-the-truck-driver crashes showed that fatigue was the most common factor, accounting for 31% of 182 crashes. NTSB, *Fatigue, Alcohol, Other Drugs, and Medical Factors in Fatal-to-the-Driver Heavy Truck Crashes (Volume 1)* (1990) ("1990 NTSB") (JA 208, 228). A later NTSB study found 58% of 107 single-vehicle truck crashes fatigue-related. 1995 NTSB (JA 38, 51).

In 1999, FHWA used DOT's two databases to estimate a "lower bound" fatigue incidence, which ranged from 2.8-6.1% for all fatal truck crashes, to 15-33% for fatal-to-truck-occupant crashes. FHWA, *Crash Problem Size Assessment Update: Large Truck Crashes Related Primarily to Driver Fatigue* (1999) (JA 710, 713). According to FHWA, "[p]erhaps the most important

deficiency of the above statistics is that they do not adequately reflect the *contributing,* as opposed to primary, role that fatigue may play in crashes . . . . Most notably, a large (but completely unknown) percentage of crashes attributed to driver inattention may be due in part to driver drowsiness/fatigue." *Id.* 714.

C. Pervasive HOS Violations

Driver fatigue from the arduous schedules allowed by the HOS rules was exacerbated by their widespread violation. Since 1938, drivers have been required to keep handwritten time logs, known as "records of duty status" ("RODS"). 49 C.F.R. § 395.8. RODS are "the primary regulatory tool . . . to determine a driver's compliance with the maximum hours of service limitations." 47 FR 53383, 53384 (1982).

Drivers have powerful incentives to falsify their logs and drive excess hours, and motor carriers encourage such cheating. The trucking industry is exempt from the Fair Labor Standards Act's overtime provisions. 29 U.S.C. § 213(b). Approximately 93% of long-haul drivers are paid by the mile or load, not hours worked, creating economic pressure to drive as many miles as quickly as possible. *See* CRASH Comments (1997) ("1997 CRASH") (JA 464) (citing Beilock, 1989 Motor Carrier Safety Study (1989) (JA 757)).

Most truck drivers are not paid for on-duty nondriving hours—*e.g.,* time

waiting on docks or loading and unloading cargo. Drivers often illegally log such hours as "off-duty," increasing hours available for driving but curtailing time for sleep. Campbell & Belzer, *Hours of Service Regulatory Evaluation Analytical Support* (2000) ("Analytical Support") (JA 1029-30); 65 FR 25552 (42% of survey respondents logged loading/unloading time as off-duty). These circumstances have turned trucks into modern sweatshops with half of long-haul drivers exceeding legal limits. Belzer, *Sweatshops on Wheels: Winners and Losers in Trucking Deregulation* (2000) (JA 1370, 1380-81, 1384, 1386, 1388-89).

HOS violations and logbook falsifications are pervasive. A University of Michigan survey showed that only 16% of drivers reported that logbooks are generally accurate, while 56% admitted working more hours than recorded in the last month. 65 FR 25558. The average driver worked 64.3 hours in the last seven days, and drivers at the 75th and 90th percentiles worked 75 hours and 94 hours per week, respectively. Analytical Support (JA 1025); PRE (JA 815); *see also* 65 FR 25558. Also striking are violations of daily maximums, with about 25% of all long-haul drivers in daily violation of HOS limits. Analytical Support (JA 1027). At the 90th percentile, long-haul drivers drove 15 hours and worked 19, leaving only 5 hours for sleep and all nonwork activities. *Id.* 1027-28; PRE (JA 816). These findings corroborate previous surveys showing HOS violations to be the

norm. 65 FR 25558; PRE (JA 805-06). Logbooks are so routinely falsified that they are known as "comic books," Petition to Require Electronic Onboard Recording Devices for Motor Carriers (1995) (JA 738), with drivers often keeping two sets—abuse leading NTSB to urge DOT to require use of automated, tamper-proof recording devices. 1990 NTSB (JA 219-21, 230, 233).[2]

As multiple studies demonstrate, exceeding legal limits exacerbates fatigue associated with lawful schedules. *E.g.,* 1995 NTSB (JA 63, 87) (82% of single-vehicle truck crashes involving drivers who exceeded HOS limits were fatigue-related); Jones & Stein, *Effect of Driver Hours of Service on Tractor-Trailer Crash Involvement* (1987) (JA 627, 631) (three-fold increase in crash risk for drivers with logbook violations); Summala & Mikkola, *Fatal Accidents Among Car and Truck Drivers: Effects of Fatigue, Age, and Alcohol Consumption* (1994) (JA 436) (truckers at fault in fatal crashes 2½ times more likely to have driven at least 10 hours than faultless truckers).

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[2] In 1988, FHWA issued a rule permitting voluntary use of onboard recorders instead of RODS. 53 FR 38666 (1988); 49 C.F.R. § 395.15. Congress subsequently passed a law requiring a DOT rulemaking within one year "to adopt methods for improving safety with respect to compliance by operators of commercial motor vehicles with hours of service regulations . . . including the use of onboard monitoring devices . . . to record . . . driving time . . . ." Truck and Bus Safety and Regulatory Reform Act of 1988, Pub. L. 100-690, § 9104, 102 Stat. 4181 (1988). That rulemaking never occurred.

Because truckers "work some of the longest hours known in this country," 65 FR 25548, they fall asleep at the wheel startlingly often. In a FHWA-sponsored survey, 28% of drivers reported falling asleep while driving *during the past month,* 32.2% of them had done so 3-6 times. Abrams et al., *Commercial Motor Vehicle Driver Fatigue, Alertness, and Countermeasures Survey* (1997) (JA 731). Not surprisingly, truck drivers suffer more work-related fatalities (898 in 1999) and injuries (145,000 in 1997) than any other workers. National Institute for Occupational Safety and Health Comments (2000) ("NIOSH") (JA 1486).

D. Statutory Mandate to Revise HOS Rules

In 1995, Congress ordered FHWA to conduct this rulemaking. The mandate followed NTSB's 1995 report urging revision of HOS rules within two years. 1995 NTSB (JA 88-89). NTSB recommended requiring at least 8 continuous hours of sleep after 10 hours of driving or 15 hours on-duty, and eliminating the sleeper-berth exception allowing drivers to take rest in two periods. NTSB also reiterated its 1990 recommendation that FHWA require onboard recorders. *Id.*

E. FMCSA's Safety Mission

In 1999, Congress established FMCSA to promote motor carrier safety. Motor Carrier Safety Improvement Act of 1999 ("MCSIA"), Pub. L. 106-159, § 101(a), 113 Stat. 1748 (1999). The Act arose from Congress's alarm over

mounting truck-crash fatalities, FHWA's delay on HOS and other rulemakings, and lax enforcement of safety regulations. Enacted "to reduce the number and severity of large-truck involved crashes," *id.* § 4(2) (49 U.S.C. § 113 note), it codifies FMCSA's preeminent safety mission:

> SAFETY AS HIGHEST PRIORITY.—In carrying out its duties, the Administration shall consider the assignment and maintenance of safety as the highest priority, recognizing the clear intent, encouragement, and dedication of Congress to the furtherance of the highest degree of safety in motor carrier transportation.

49 U.S.C. § 113(b); *see also* MCSIA §§ 3(1), (3) & (7) (findings).

II. HOURS-OF-SERVICE RULEMAKING

A. Notice of Proposed Rulemaking

1. 24-Hour Schedule

From 1939 to 1962, truck drivers operated on a 24-hour work/rest schedule limiting them to driving 10 hours and working 16 (later changed to 15) hours, with at least 8 consecutive hours off-duty, in each 24-hour period. In 1962, the 24-hour limit was dropped, permitting drivers to operate on an 18-hour work/rest cycle and to drive up to 16 hours daily. 65 FR 25547-48, 25553. This change allowed drivers to be placed on a noncircadian, backward-rotating schedule, and significantly decreased daily off-duty time. *Id.* 25553. A noncircadian schedule works against biological needs because, as FMCSA recognized, "[h]umans are

biologically programmed to operate on a daily cycle of just over 24 hours." *Id.* 25554.

A noncircadian schedule, particularly one involving night work, puts drivers in a "dual predicament": They must perform tasks when they are least able and sleep when their bodies are least receptive. *Id.* 25553. Substantial research establishes that "[t]he time of day when sleep is taken can affect how long the sleep period lasts"; thus, nightworkers' daytime sleep is shorter, and of poorer quality, than their night sleep on rest days. *Id.* 25555, 25558, 25561-62; *e.g.,* ExR (JA 556-57); Åkerstedt, *Readily Available Countermeasures Against Operator Fatigue* (1997) ("Åkerstedt") (JA 760-61); AHAS Comments (2000) ("2000 AHAS") (JA 1443-44 & n.44). As a result, even nightshift workers with consistent schedules can accumulate a "sleep debt" that can "seriously affect the level of performance and safety." 65 FR 25554.

Accordingly, FMCSA, heeding its Expert Panel, made its first priority to "[i]ncrease the 18-hour on-duty/off-duty cycle to a normal 24-hour work cycle." *Id.* 25558; *see id.* 25561; ExR (JA 549). FMCSA constructed five regulatory options, each based on a circadian work/rest schedule. 65 FR 25567-68. Noncircadian options, including retaining existing rules, were rejected based on the scientific record. *Id.* 25559. FMCSA proposed to adopt Option 5, permitting long-

haul drivers to work or drive up to 12 hours within a 14-hour work period each 24-hour cycle, with 10 consecutive hours off-duty and 2 additional off-duty hours to be taken during the shift or added to the off-duty period. *Id.* 25568, 25581. The proposal did not require drivers to begin work at the same time each day, but recommended regular schedules to the extent possible. *Id.* 25578; PRE (JA 867-68). The effect of the proposal was a 24-hour schedule for drivers driving the maximum and resting the minimum.

2. Split-Rest Periods in Sleeper-Berths

The NPRM stated that drivers must have "an opportunity for eight consecutive hours of uninterrupted sleep every day," 65 FR 25554, and that the existing requirement of 8 hours off-duty between shifts did not afford an opportunity for 8 hours of *sleep* given competing life activities. *Id.* 22547, 22554, 22561. FMCSA concluded that "many CMV drivers are not getting sufficient sleep," which "leads to degradations of cognitive performance, including increased mental errors, lapses in vigilance, slower reaction time, and errors in judgment. These errors in turn heighten the likelihood of CMV crashes." *Id.* 25569.

Therefore, FMCSA proposed a minimum of 10 consecutive hours off-duty for long-haul drivers, *id.* 25568, 25603 (§ 394.141), and additional changes to guarantee drivers 8 consecutive hours of uninterrupted sleep daily. *Id.* 25554. For

example, FMCSA proposed that drivers "restart" their "off-duty clock" if motor carriers interrupted off-duty time. *Id.* 25587, 25603 (§ 394.143). More importantly, because "sleep obtained in discontinuous segments is not as restorative as continuous sleep," *id.* 25561, FMCSA proposed abolishing for solo drivers the sleeper-berth exception, which permitted them to take "consecutive" off-duty hours in two periods. *Id.* 25586-87 (citing ExR (JA 553-54)), 25603 (§ 394.141).

3. Consecutive Driving Hours

Consistent with its longstanding view that 10 consecutive hours of driving is already at the outer limit for safety, FMCSA acknowledged that "[n]ot surprisingly, risk increases with time driven." 65 FR 25546. FHWA told Congress the same thing 13 years ago. 1990 FHWA (JA 145). Citing the Jones & Stein study, FHWA affirmed in that report that "driving in excess of 8 hours may be associated with a significantly increased risk of crash involvement." *Id.* 146; *accord* 2000 AHAS (JA 1425-29) (discussing FHWA statements); 68 FR 22471-72 (prior agency statements).

The NPRM showed how sharply relative crash risk climbs after 8 hours of driving: At 10 hours, relative crash risk is nearly double the already elevated risk at 8 hours; at 11 and 12 hours, the risk doubles again. 65 FR 25544 (Chart 5),

25546; PRE (JA 836-37). These results underestimate risk because longer driving hours are underreported. 65 FR 25546; Analytical Support (JA 998-99, 1009). The NPRM recognized that other research evinced a "dramatic and consistent increase in crash risk after 8 hours." 65 FR 25546.[3]

Although it acknowledged the increased risk after 8 hours of driving, FMCSA proposed to eliminate the distinction between driving and on-duty nondriving hours and permit drivers to drive/work up to 12 of every 24 hours. *Id.* 25568, 25587, 25601 (§ 394.103(a)(1)), 25603 (§ 394.147(a)). FMCSA did not explain why 12 hours of driving would be safe.

4. Weekly Recovery Period

Several of FMCSA's "principles for regulatory improvement" concerned its determination, consistent with the Expert Panel's recommendation, JA 556-57, that drivers need a weekly off-duty period to recover from cumulative fatigue. 65 FR 25558. As the NPRM explained, research demonstrates that "to negate the effect of accumulated week-long sleep deprivation and restore alertness to the human body, it is necessary to have *at least* two consecutive nights off-duty that include

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[3] *See, e.g.,* 1997 AHAS (JA 371-74); 2000 AHAS (JA 1415-29); IIHS Comments (1997) (JA 403-04, 411); IIHS Comments (1999) (appending key studies) (JA 611-88); IIHS Comments (2000) ("2000 IIHS") (JA 1146-47, 1150-52).

the periods from midnight to 6 a.m." *Id.* 25555 (emphasis added). FMCSA pointed to studies demonstrating increased crash risk due to cumulative fatigue from long driving hours over multiple days, *id.* 25556, and a comprehensive literature review confirming that one day off was insufficient, especially for nightworkers. *Id.* (citing Smiley & Heslegrave, *A 36-Hour Recovery Period for Truck Drivers* (1997) ("Smiley & Heslegrave") (JA 505)). The review also "raise[d] concerns about a 36-hour reset that would allow drivers to accumulate up to 92 hours on-duty within a seven-day period, particularly for night driving." *Id.* Accordingly, FMCSA proposed that drivers have a "weekend" of 32-56 hours off-duty each week, encompassing two consecutive nights (including 12-6 a.m.) and the intervening day, *id.* 25555, 25558, 25587, 25603 (§ 394.161)—recovery time the Expert Panel deemed "absolutely minimal." JA 584.

This "weekend" addresses not only cumulative fatigue, but the problem of nighttime driving. The Expert Panel explained: "Because we are inextricably tied to a 24-hour cycle whereby our metabolism, and correspondingly, our alertness, are decreased at certain times . . . , nighttime driving is more demanding." JA 549. Hence "accident risk is substantially higher during nighttime hours . . . , independent of the length of time on the job, and this elevated risk cannot be ignored." *Id.* 549-50; 65 FR 25561-62. Driving between midnight and 6 a.m. is

associated with a four-fold or greater increase in fatigue-related crashes. ExR (JA 550); *see also* 65 FR 25556-57; PRE (JA 804). Both fatigue-related fatal truck crashes and relative risk of fatigue peak between 4 and 6 a.m., during the "circadian trough." 65 FR 25543 (Charts 2 & 3), 25546. Nighttime crashes are also more severe: About three times as many fatalities per thousand police-reported crashes occur from midnight to 6 a.m. *Id.* 25557.

Although FMCSA was unwilling to cap nighttime driving hours as the Expert Panel suggested, *id.* 25562, 25569-70, the NPRM dealt with nighttime driving by (1) increasing consecutive hours off-duty to allow longer sleep; (2) returning drivers to a 24-hour clock; and (3) requiring off-duty time spanning at least two nights every 7 days to allow restorative sleep. *Id.* 25557-58.

5. Electronic Onboard Recorders

FMCSA acknowledged widespread flouting of HOS rules, *id.* 25558, and agreed that the proposal's safety objectives would be "attainable" only "if the rules are followed." *Id.* 25585. Accordingly, the NPRM proposed that long-haul drivers use electronic onboard recorders ("EOBRs") instead of logbooks, which "should ensure credible verification of drivers' adherence to, and improve motor carriers' ability to manage driver compliance with, these proposed rules." *Id.* 25563; *see also id.* 25570, 25590, 25604 (§ 394.201).

FMCSA noted that its proposal required only "relatively simple technologies and single-purpose devices." *Id.* 25563, 25574-75. It rejected the notion that EOBRs would invade drivers' privacy. *Id.* 25563. The agency acknowledged EOBR costs, but said they were "somewhat mitigated by the growing inclination toward investment" in electronic technologies and were "justified by improved regulatory compliance and reduced crashes." *Id.* 25585. FMCSA also recognized that EOBRs would eliminate the substantial paperwork costs associate with RODS. *Id.* 25571.

6. Cost-Benefit Analysis

FMCSA estimated that "fatigue is either a primary or secondary factor" in 15% of truck-related fatal crashes, 65 FR 25545-46; PRE (JA 799, 831) and that it contributed to 755 truck-crash fatalities and 19,705 injuries annually. 65 FR 25546 (Table 2), 25568; PRE, Table 20 (JA 832). It made a "conservative" prediction that its proposal would reduce fatigue-related crashes by 5% and that the EOBR requirement would curtail them an additional 15%. 65 FR 25569; PRE (JA 801, 873). The proposal would therefore avoid 115 fatalities and 2,995 injuries annually, with total benefits of $6.8 billion. 65 FR 25579 (Table 14), 25581, 25594. It would entail substantial costs, in part because of new drivers needed to cover excess hours, *id.* 25572-73, 25579; PRE (JA 853-67), but was projected to

show net benefits of $3.359 billion over 10 years. 65 FR 25579 (Table 15), 25581.[4]

B. The Final Rule

FMCSA's final rule abandons virtually every precept in the NPRM. It does not place drivers on a 24-hour schedule; guarantee 8 continuous hours of sleep, provide a weekly recovery period, or address nighttime driving. Worse still, it *expands* both the consecutive hours and weekly hours that drivers may legally drive. Finally, the rule does nothing to address rampant HOS violations because FMCSA declined to require EOBRs for any drivers.

1. 24-Hour Schedule

Although industry and safety groups supported, in principle, the need for a 24-hour schedule, and FMCSA "believe[d] that the strict 24-hour work/rest cycle would be ideal from a scientific viewpoint," the agency concluded that "it is simply not practical and too inflexible to require of the industry." 68 FR 22468. Alluding to industry comments that a "fixed starting time each day" would create operational difficulties, *see id.* 22467-68, FMCSA stated that moving "towards" a 24-hour cycle "without requiring a rigid starting time" could achieve safety

[4] This calculation included efficiency benefits of $400-$470 million annually from eliminating RODS, a burden on which drivers and clerks spent an estimated 42.5 million hours annually. 65 FR 25571; PRE (JA 847-48).

benefits with "less productivity disruption[]." *Id.* 22468.

FMCSA's final rule therefore allows drivers to drive up to 11 consecutive hours and work up to 14 hours, followed by 10 hours off-duty. *Id.* 22492, 22504, 22516 (§ 395.3(a)). The rule will produce a 24-hour cycle if drivers work 14-hour shifts, but a 21-hour cycle for drivers who maximize driving time by alternating 11 hours driving with 10 hours off-duty. *Id.* 22468. FMCSA cited no evidence that a 21-hour backward-rotating cycle is safer than the prior 18-hour backward-rotating cycle—much less that it is as safe as a 24-hour circadian schedule. *Id.*

2. Split-Rest Periods in Sleeper-Berths

The final rule increased off-duty periods to 10 hours, as proposed. *Id.* 22470, 22516 (§ 395.3(a)). FMCSA reiterated that "[e]ach driver should have an opportunity for eight consecutive hours of *uninterrupted* sleep every day," *id.* 22469 (emphasis added), but paradoxically declined to require that solo drivers using sleeper berths take their off-duty time in one block. The agency cited its new study showing that single drivers using sleeper berths had "many more critical incidents at all levels of severity as compared to team drivers" and were "involved in four times the number of very/extremely drowsy" ratings than team drivers. *Id.* 22465. FMCSA also acknowledged studies demonstrating "that drivers using sleeper berths had a higher crash risk than drivers obtaining their sleep in a bed."

Id. 22464. Nevertheless, FMCSA continued to allow single drivers to divide their rest because the "[u]se of sleeper berths in long-haul operations is firmly entrenched in the practice, culture, and equipment of the trucking industry." *Id.* 22466, 22515 (§ 395.1(g)).[5]

3. Consecutive Driving Hours

While reducing consecutive on-duty hours from 15 to 14, *id.* 22471, 22473, 22504, 22516 (§ 395.3(a)(2)), FMCSA *increased* permissible consecutive driving hours from 10 to 11. *Id.* 22473, 22475, 22516 (§ 395.3(a)(1)). Many organizations vigorously opposed any increase. *E.g.,* PATT Comments (2000) (JA 1110-11); 1997 CRASH (JA 472-73); 2000 AHAS (JA 1415-29); 2000 IIHS (JA 1146-47, 1150-52); NIOSH (JA 1487-88); Teamsters Comments (2000) (JA 1528-29). FMCSA conceded that "AHAS correctly cited studies showing that performance begins to degrade after the 8th hour on duty and [that risk] increases geometrically during the 10th and 11th hours." 68 FR 22471; *accord id.* 22470. Nonetheless, without citing any evidence, FMCSA declared that because "modern" trucks are nicer, "there is little doubt" that "fatigue directly attributable to the exertion required to operate the modern CMV is less of a factor now." *Id.* 22472;

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[5] Technical amendments issued on September 30, 2003 made nonsubstantive changes to the sleeper-berth exception. *See* 68 FR 56211 (§ 395.1(g)) (JA 1847).

see id. 22471, 22475, 22492, 22502.

FMCSA admitted this increase in consecutive driving hours reversed longstanding agency policy, *id.* 22471-72, but stated that unidentified "recent studies" had caused the agency "to reevaluate its former policy statements." *Id.* 22472.

4. Weekly Recovery Period—34-Hour Restart

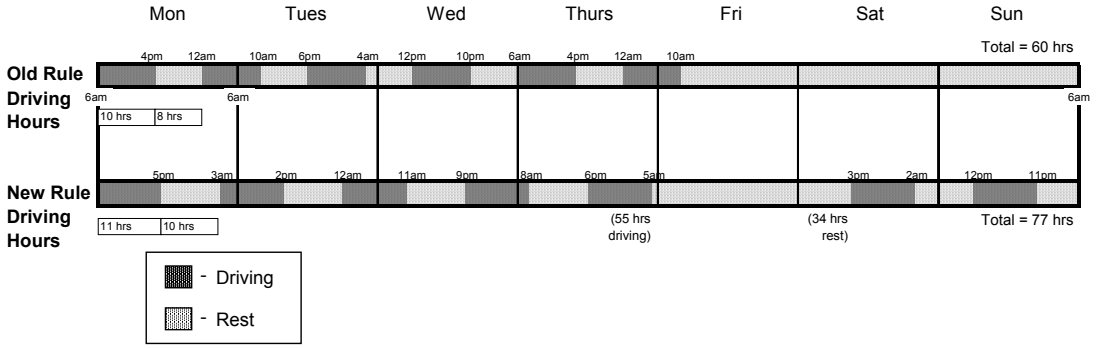
FMCSA observed that industry objected to the NPRM's proposed "weekend" because it allegedly would shift some nighttime driving to daytime. Although it denied intending to curtail nighttime driving significantly, *id.* 22478, the agency credited comments that two consecutive nights off would "create havoc" on crowded highways during daytime, disrupt operations, and impose substantial costs. *Id.* 22477-78. Claiming that it had not adequately researched the consequences of displacing nighttime truck traffic, FMCSA considered new options. *Id.* 22492.

FMCSA turned to the American Trucking Associations' ("ATA") proposal that drivers be limited to 70 hours work/driving in 7 days, or an average of 140 hours in 14 days. The 14-day proposal would allow up to 84 hours on-duty during the first 7 days; drivers would then have to take 34 hours off-duty, which could be followed by a maximum of 56 hours on-duty in the remaining 5½ days. *Id.* 22467,

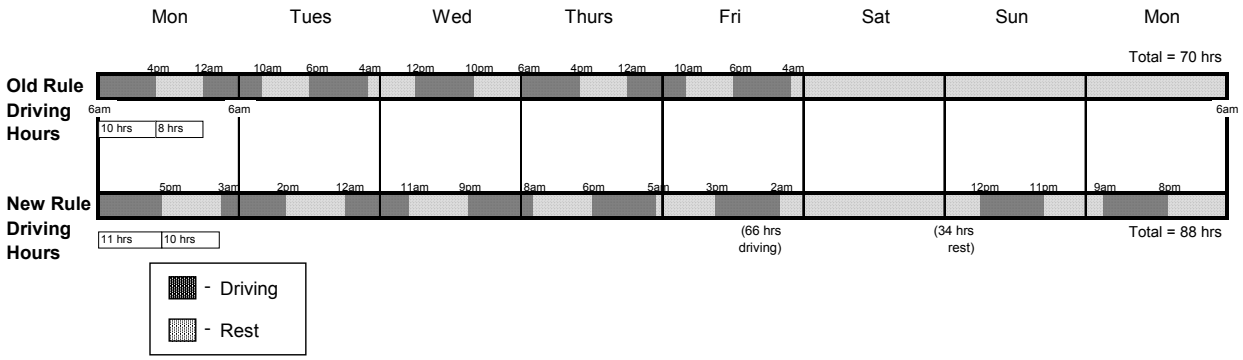
22475, 22491. FMCSA noted that ATA cited no scientific support for this aspect of its proposal, *id.* 22467, but praised it for "provid[ing] opportunities for considerable gains in productivity." *Id.* 22479. The agency then proceeded to adopt a final rule that purports to retain the 60- and 70-hour weekly limitations, but provides that weekly tallies restart after 34 hours off-duty. *Id.* 22516 (§ 395.3(c)).

FMCSA neglected to mention that a 34-hour restart provision would permit drivers who had exhausted their weekly hours to resume driving within their 7- or 8-day schedules—whereas, under the old rules, a driver accumulating hours at the maximum rate would reach the weekly limit in little more than 4 days and then be required to take the rest of the week off before driving again. *See id.* 22502. FMCSA does not acknowledge that, under the final rule, a driver on a 60-hours-in-7-days schedule who drives 21-hour rotations (11-hours-driving/10-hours-off-duty) and takes 34 consecutive hours off-duty, can drive *77 hours in 7 days*—28% more hours than the old rules allowed. A driver on a 70-hours-in-8-days schedule can now drive *88 hours in 8 days*—26% more hours than previously allowed. The following graphs illustrate these huge increases:

Comparison Between Old Rule and Final Rule for 60-Hours-in-7-Days Schedule

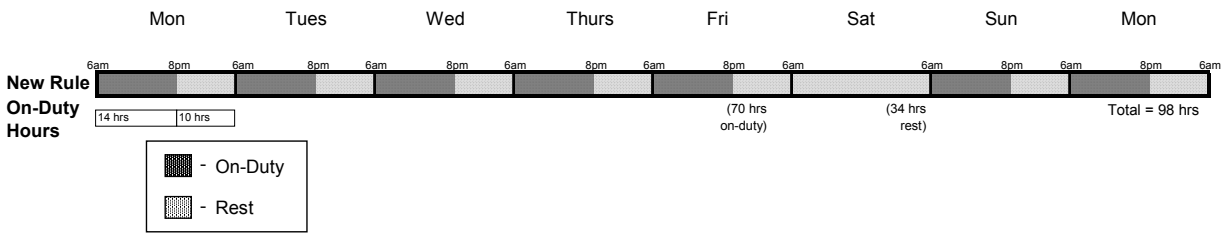


Comparison Between Old Rule and Final Rule for 70-Hours-in-8-Days Schedule



For drivers maximizing on-duty time, weekly increases in hours are even greater. A driver working 14-hour shifts can accumulate 84 hours in 7 days or 98 hours in 8 days—a 40% increase over the old limits. A driver on a 70-hours-in-8 days schedule can work as follows:

On-Duty Hours Under Final Rule for 70-Hours-in-8-Days Schedule



Unlike the old rules, the NPRM (*see* 65 FR 25588, 25604 (§§ 394.165(c) & 394.167(a)(2))), and the ATA 14-day averaging proposal, the final rule contains *no cap* on hours worked in 14 days. Thus, the rule allows a driver to drive 154 hours or work 168 hours in 14 days—far more than even the ATA's 140-hours-in-14-days proposal. FMCSA cited no evidence that a 34-hour restart provision would be safe, much less *improve* truck safety. The provision enables so many more driving hours that FMCSA concluded the rule will necessitate hiring 58,500 *fewer* long-haul drivers, saving industry over $1 billion annually, compared to existing rules. 68 FR 22495 (Tables 5 & 6); Regulatory Impact Analysis and Small Business Analysis for Hours of Service Options (2002) ("RIA"), Exhs. 9-1 & 9-2 (JA 1732-33).

5. Electronic Onboard Recorders

FMCSA noted that industry was not uniformly opposed to an EOBR requirement, that EOBRs have been used since 1985, and that some carriers have made substantial investments in the technology. 68 FR 22485. Nonetheless, FMCSA declined to mandate them "at this time." *Id.* 22488.

The agency identified several EOBR manufacturers that could meet its performance standards, *id.,* and the record establishes that inexpensive devices satisfying the NPRM's requirements are available. *E.g.,* VDO North America

Comments (2000) ("VDO") (JA 1465-77). Many carriers (25-30%) have electronic onboard systems, yet still use RODS for HOS compliance. Roundtable One (JA 1210-11) (FMCSA official). FMCSA also acknowledges that high-tech global positioning systems ("GPS") are "widely used" in the trucking industry, 65 FR 25563; *accord* 68 FR 22485, and are capable of monitoring hours of service. *See* 65 FR 5927 (2000).[6]

Nonetheless, FMCSA forestalled a decision on mandating EOBRs "to continue research on EOBRs and other technologies." 68 FR 22488. It claimed uncertainty about whether to use a design or performance standard, *id.,* notwithstanding 15 years of voluntary use of EOBRs under a performance standard. *See* 49 C.F.R. § 395.15. It cited industry "privacy" concerns that information from EOBRs could be subpoenaed in lawsuits. 68 FR 22489. FMCSA concluded it had "neither the economic and safety data needed to justify an EOBR requirement at this time, nor the support of the transportation community at large," *id.,* and it provided no timeline for an ultimate decision.

FMCSA kept silent on the significant efficiency gains the NPRM had identified from eliminating RODS, although the final rule sharply increased the

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[6] ATA estimates that up to 70% of long-haul trucks use GPS technology. Davis, *Global Positioning Technology Helps Streamline Trucking, Shipping,* Virginian-Pilot, Nov. 18, 2002 (2002 WL 103643425).

NPRM's estimate of hours spent on RODS. Relying on industry information, FMCSA now estimates that RODS impose over 161 million burden hours per year—*nearly four times the NPRM assessment*. *See id.* 22511; 67 FR 1396 (2002).

6. Protecting Driver Health

The final rule and preamble did not address the mandates in 49 U.S.C. § 31136(a) that DOT protect driver health. The RIA's cost-benefit analysis also ignored driver-health effects.

7. Cost-Benefit Analysis

At industry's request, FMCSA hired an independent contractor to conduct the RIA analyzing safety and economic impacts of the rule. 68 FR 22459. The RIA bears no resemblance to FMCSA's own PRE. The RIA analyzed different regulatory options (the PATT, ATA, and FMCSA options); considered many additional factors in calculating costs; constructed a complex, untested model for predicting benefits from truck-crash reductions; and changed the assumptions underlying the estimated percentage of truck crashes attributable to fatigue, reducing it from 15% to 8.15%. *Compare* 68 FR 22497; RIA (JA 1707-08 & n.111), *with* 65 FR 25545-46; PRE (JA 831).

The contractor consulted with industry representatives, but not safety organizations. RIA, Appendix K (JA 1779-80). Although the RIA is dated

December 2002, FMCSA did not place it in the docket until April 22, 2003, six days *after* issuing the final rule. The public therefore had no opportunity to comment.

The way the RIA "modeled" benefits enabled FMCSA to declare that the rule would improve truck safety and reduce fatigue-related crashes, as Congress directed, 68 FR 22511, and would produce net benefits compared to existing rules with full compliance. *Id.* 22496 (Table 10), 22497, 22500; RIA, Exh. 9-10 (JA 1737).[7] The RIA analyzed benefits of regulatory changes in terms of truck crashes supposedly avoided, based on the Walter Reed Sleep Performance Model ("SPM"). JA 1711-12; *see* Balkin et al., *Effects of Sleep Schedules on Commercial Motor Vehicle Driver Performance* (2000) ("Balkin") (JA 1043).

The SPM was based on a study of the effects of restricted sleep on subjects' performance in laboratory tests. The study's authors cautioned, however, that it was not well-designed for assessing time-of-day effects, JA 1083, and that "the implications of the specific predicted performance index values for other tasks (such as CMV driving) are not yet known." *Id.* 1091. In addition, although it

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[7] Because noncompliance is the norm, the RIA analyzed costs and benefits in comparison with two baselines: the status quo and existing rules with full compliance. *See* RIA, Chapter 9 (JA 1732-43); 68 FR 22493-500. However, the RIA assumed full compliance with the final rule itself.

considers sleep history, the SPM does not take into account what a subject is doing during waking hours. The RIA concedes the "[t]he model does not differentiate between 'awake and working' versus 'awake and resting'" and "does not recognize any time-on-task effects separate from the general cognitive depletion and circadian functions." JA 1715. Thus, by relying on the SPM, the RIA completely ignored the consequences of both increased consecutive driving hours and cumulative fatigue associated with the potential 26-28% increase in weekly driving hours and 40% increase in overall weekly work under the new rule. The RIA's use of the SPM also assumed drivers would have 10 uninterrupted hours of rest, even though the final rule perpetuated split sleeper-berth rest. *See, e.g.,* RIA, Appendix F (JA 1750-68) (sample driver schedules).

The RIA used the SPM to derive crash-risk "increments" under the final rule, the old rules, and PATT and ATA options. These risks were "calibrated" based on the RIA's revised estimate of the percentage of fatigue-related truck crashes. *Id.* 1725-26 & 1769-78 (Appendix G). The RIA's significant reduction of that estimate profoundly affected its calculation of benefits, which "are largely proportional to the fatigue percentage." *Id.* 1739.

Based on the new fatigue percentage, the RIA estimated that 396 annual truck-crash fatalities are attributable to fatigue (not the 755 estimated in the

NPRM), JA 1736 (Exh. 9-7); 68 FR 22500 (Table 18), and predicted that compliance with the final rule would save 24-75 lives annually, compared to compliance with existing rules. 68 FR 22500. After monetizing crash-reduction benefits and netting them against costs, FMCSA concluded that the final rule "represents the best combination of safety improvement and cost containment that can realistically be achieved." *Id.* 22511.

SUMMARY OF ARGUMENT

Section 408 directed FHWA to "deal[] with" specified issues to "reduc[e] fatigue-related incidents" and "increas[e] driver alertness." Thereafter, Congress established FMCSA and made safety its highest priority. The final rule falls woefully short of meeting these mandates, abandons virtually every principle FMCSA had pronounced necessary for improving obsolete HOS rules, and will lead to many more unnecessary deaths and injuries.

First, since 1962, drivers have been allowed to operate on a backward-rotating, 18-hour work/rest cycle, rather than the 24-hour schedule FMCSA deemed necessary to match the body's circadian cycle and promote safety. Yet the final rule substitutes one backward-rotating, noncircadian cycle for another without any basis for concluding that the new 21-hour cycle will improve safety.

Second, FMCSA found that drivers need 8 consecutive hours of

uninterrupted sleep every day and accordingly proposed to abolish the sleeper-berth exception for single drivers. But the final rule, without scientific justification, allows single drivers using sleeper berths to continue to split sleep into two segments that FMCSA concedes are inadequate to restore fitness to drive.

The final rule also scuttled longstanding policy by increasing maximum consecutive driving hours from 10 to 11. FMCSA asserted that "recent studies" justify this reversal, but cited *no* such studies. In fact, available research and FMCSA's own data demonstrate just the opposite. Even more recklessly, FMCSA adopted a "restart" provision allowing drivers to reset their weekly tallies following 34 hours off-duty, enabling them to increase weekly driving hours by 26-28% or weekly working hours by 40%. FMCSA did not justify or even acknowledge this effective abolition of weekly limits.

Finally, the rule perpetuates a system whereby drivers violate HOS rules and falsify logbooks so routinely that logs are known as "comic books." The NPRM proposed to mandate that long-haul drivers use EOBRs—already employed by a substantial proportion of industry—to reduce widespread cheating. However, FMCSA stalled in the final rule on "dealing with" EOBRs as the statute requires, claiming the need to research topics already well known to it. None of FMCSA's reasons for its about-face withstands scrutiny.

STANDARD OF REVIEW

The Court reviews the final rule to determine whether it is arbitrary and capricious, an abuse of discretion, or otherwise not in accordance with law. 5 U.S.C. § 706(2)(A).

ARGUMENT

THE FINAL RULE IS CONTRARY TO LAW BECAUSE IT FAILS TO SATISFY STATUTORY MANDATES AND IS ARBITRARY AND CAPRICIOUS BECAUSE FMCSA ABANDONED, WITHOUT JUSTIFICATION, ITS OWN STATED SAFETY PRINCIPLES.

Section 408 requires FMCSA to "reduc[e] fatigue-related incidents" involving trucks and "increas[e] driver alertness." 49 U.S.C. § 31136 note. The MCSIA dictates that FMCSA "consider the assignment and maintenance of safety as the highest priority." 49 U.S.C. § 113(b). FMCSA agrees that these statutes "demand that this rulemaking improve commercial motor vehicle safety." 68 FR 22457, 22511. FMCSA's assertions that the final rule "represents a substantial improvement in addressing driver fatigue over the current regulation" and will "reduce the effect of cumulative fatigue and prevent many of the accidents and fatalities to which fatigue is a contributing factor," *id.* 22457, 22511, are demonstrably false. Equally important, the final rule abandons FMCSA's own articulated safety principles without a reasoned explanation or record support.

A. FMCSA's Failure to Adopt a 24-Hour Work/Rest Cycle

FMCSA acknowledged general agreement on the need for a 24-hour work/rest cycle, *id.* 22468—the bedrock of the proposed rule and among the Expert Panel's highest priorities. *See* 65 FR 25558, 25561; ExR (JA 549). Nonetheless, FMCSA settled for moving "towards" a 24-hour cycle by promulgating a 21-hour schedule for drivers who maximize driving time. 68 FR 22468. The 21-hour cycle, like the old 18-hour cycle, creates a backward-rotating schedule that inverts drivers' schedules over successive days on cross-country trips because each driving session starts hours earlier than the last. The agency admits that "alternating day-and-night driving has been proven to be detrimental to a driver's sleep[,] thereby increasing the risk that the driver will cause a crash." *Id.* 22491.[8]

The sleep-wake cycle "never adjusts completely to rotating night work." Åkerstedt (JA 763). Backward-rotating shifts are especially fatiguing because the biological sleep-wake cycle shifts forward, averaging just over 24 hours, and

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[8] FMCSA stated that the rule incorporates a 24-hour work/rest cycle (14-hours-on-duty/10-hours-off-duty) and a 21-hour drive/rest cycle (11-hours-driving/10-hours-off-duty). 68 FR 22468. The latter is more important because drivers are not required to work all 14 hours allowed, and long-haul drivers have an incentive to maximize paid driving hours, not unpaid duty hours. Accordingly, FMCSA has generally characterized prior rules as establishing an 18-hour cycle (10-hours-driving/8-hours-off-duty), *e.g., id.* 22491; 65 FR 25558; 61 FR 57257, not a 23-hour cycle (15-hours-on-duty/8-hours-off-duty).

because long backward-rotating shifts generally allow insufficient rest time. *See id.*; Miller, *Fundamentals of Shift Work Scheduling* (1992) (JA 702); FHWA, *An Annotated Literature Review* (1999) ("Literature Review") (JA 915). A seminal DOT-sponsored study demonstrated 25 years ago that performance of long-haul drivers with irregular driving schedules degraded after 4-5 hours driving compared to 8½ hours for drivers on regular schedules. *See* Mackie & Miller, *Effects of Hours of Service Regularity of Schedules, and Cargo Loading on Truck and Bus Driver Fatigue* (1978) (JA 240-42).

Nowhere does FMCSA cite *any* evidence that moving "towards" a 24-hour work/rest cycle "could achieve safety benefits." 68 FR 22468. It provides no justification for its conviction that replacing one noncircadian, backward-rotating schedule with another will remedy the "profound effects" of the 1962 amendments dropping the 24-hour schedule. 65 FR 25548; *see also* Literature Review (JA 893) (criticizing 1962 amendments as "compromise[] that inadvertently or purposely placed other issues ahead of sound science"). The NPRM decisively rejected regulatory options not embracing a circadian schedule, *e.g.,* 65 FR 25559-62, 22567-68, and concluded that a 24-hour cycle was necessary to curtail risks of nighttime driving. *Id.* 25557-58. In deserting this core priority, FMCSA failed to "articulate a satisfactory explanation for its action including a 'rational connection

between the facts found and the choice made,'" and its ultimate choice "runs counter to the evidence" before it. *Motor Vehicle Mfrs. Ass'n v. State Farm Mutual Automobile Ins. Co.,* 463 U.S. 29, 43 (1983) (citation omitted).

FMCSA's only explanation for abandoning a 24-hour cycle is nonsensical. Citing industry claims that FMCSA had proposed a "strict" schedule with a fixed starting time each day, 68 FR 22467-68, FMCSA dubbed a 24-hour cycle "not practical" and "inflexible." *Id.* 22468. But the NPRM had expressly *rejected* a requirement that drivers begin work the same time each day, 65 FR 25578; JA 867-68, and only "recommend[ed] that carriers and drivers keep regular schedules to the maximum extent possible." *Id.* The NPRM's 12-hours-on/12-hours-off schedule did not propose a "strict" 24-hour schedule with a "rigid starting time," 68 FR 22468, but simply marked the limits of daily driving/duty hours and minimum off-duty hours required. *See* 65 FR 25601 (§ 394.103), 25603 (§ 394.141).

FMCSA could readily have adopted a 24-hour, circadian schedule for drivers maximizing driving hours without requiring uniform daily schedules for all drivers. It could, for example, have promulgated the 12-hours-on/12-hours-off schedule in the NPRM (with no more than 10 of 12 hours spent driving). Alternatively, FMCSA could have modified its 11-hours-driving/14-hours-on-

duty/10-hours-off-duty schedule by requiring drivers who drive, say, 10 or 11 hours, either to use their remaining 3 or 4 on-duty hours or to add those hours to off-duty time. Then drivers maximizing driving hours would be on a nonrotating, circadian schedule, while those driving fewer hours would not. FMCSA's failure to consider such obvious and safety-conscious alternatives confirm that its adoption of a noncircadian cycle was arbitrary and capricious. *See Yakima Valley Cablevision, Inc. v. FCC,* 794 F.2d 737, 746 & n.36 (D.C. Cir. 1986); *Public Citizen v. Steed,* 733 F.2d 93, 99 (D.C. Cir. 1984).

B. FMCSA's Refusal to Eliminate the Sleeper-Berth Exception

FMCSA abandoned another of its fundamental precepts by preserving the sleeper-berth exception for single drivers. FMCSA conceded that studies demonstrated a higher crash risk for drivers using sleeper berths, 68 FR 22464, a risk leading NTSB repeatedly to urge DOT to eliminate the exception. *E.g.,* 1995 NTSB (JA 88); NTSB Comments (1997) (JA 496). The NPRM determined that "[e]ach driver should have an opportunity for eight consecutive hours of uninterrupted sleep every day," 65 FR 25554, and the final rule's preamble parroted that conclusion. 68 FR 22469; *see also* 49 U.S.C. § 31136 note (§ 408 rulemaking must "deal[] with . . . 8 hours of continuous sleep"). Yet FMCSA stated, in blatant contravention of this principle, that "[b]ecause of the comments

and the new studies released after the NPRM's publication, the FMCSA has decided to retain the sleeper berth exception." 68 FR 22465. Again, the agency failed to "examine the relevant data and articulate a satisfactory explanation for its action." *State Farm,* 463 U.S. at 43.

First, although FMCSA referred to "studies" postdating the NPRM, 68 FR 22465, it cited only Dingus et al., *Impact of Sleeper Berth Usage on Driver Fatigue* (2002) ("Dingus") (JA 1636), which it characterized as concluding "that sleeping in a moving vehicle impairs the quality of rest," 68 FR 22464—an observation irrelevant to *single* drivers, who do not sleep in moving vehicles. Moreover, Dingus actually supports *eliminating* the exception for single drivers because it found that they "had many more critical incidents at all levels of severity as compared to team drivers." *Id.* 22465. Single drivers were "extremely drowsy" or "very drowsy" 4 times as often as team drivers, *id.,* and almost 2.5 times more than expected based on driving-time exposure, JA 1659—drowsiness that greatly "compromises their ability to safely operate their vehicles." *Id.* 1641, 1654, 1660. The study found that fatigue from sleeper-berth use was compounded by long driving times, HOS violations, and multiple days' driving, *id.* 1641, 1657—all conditions that will persist under the final rule. No rational decisionmaker could invoke this study to justify the exception.

Second, FMCSA asserted that sleeper berths are "firmly entrenched in the practice, culture, and equipment of the trucking industry." 68 FR 22466. That a demonstrably unsafe practice is "entrenched" in a regulated industry is no justification for maintaining it—especially for an agency charged with reducing fatigue and prioritizing safety. *Cf. State Farm,* 463 U.S. at 49 ("[S]urely it is not enough that the regulated industry has eschewed a given safety device."). In any event, petitioners do not contend that single drivers should not use sleeper berths, but only that drivers should be prohibited from splitting their required rest. In addition, a prohibition on splitting the 10-hour off-duty block would not deny flexibility to take additional breaks in sleeper berths throughout the day. *See* 1995 NTSB (JA 83).

FMCSA agreed with industry that "the proximity and convenience of the sleeper berth reduces the importance of the length of the uninterrupted period." 68 FR 22466. This claim runs counter to the record and FMCSA's own findings. Although drivers need not commute to their berths, 10 hours is *the bare minimum* for obtaining necessary sleep; indeed, FMCSA agrees that research from *all* transportation modes confirms the need for off-duty periods of 10-16 hours. *Id.* 22469; 65 FR 25554; *see also* 2000 IIHS (JA 1149-50). It is unrealistic to expect someone who has driven 10 or 11 hours and engaged in heavy loading/unloading

operations for a few more, to finish work, leap into his sleeper berth, and immediately sleep for 8 hours. An FHWA-sponsored study revealed "that drivers who are off-duty for 8 hours generally obtain only about 5 hours of sleep." 65 FR 25561. Another study showed that long-haul drivers frequently obtain *no* sleep during off-duty periods, especially periods of 12 hours or less. Balkin (JA 1086-87). Furthermore, the final rule permits drivers to split rest in ways that do not even approach guaranteeing 8 hours' sleep, such as splitting it in equal segments.

Finally, FMCSA ignored how this exception interacts with other aspects of the rule to exacerbate fatigue. For example, because the new 14-hour on-duty clock is "tolled" *only* by sleeper-berth time, a change from current practice, *see* 68 FR 22504; 68 FR 56209, sleeper-berth time will be subject to even greater abuse, as incentives mount to log duty or break hours as "sleeper-berth time" to maximize driving. *See* Safe Drive America Testimony (2000) (JA 1125-26).

C. Expansion of Consecutive Driving Hours

FMCSA concedes that studies show that "performance begins to degrade after the 8th hour on duty" and risk "increases geometrically during the 10th and 11th hours," 68 FR 22471; *see also id.* 22470; 65 FR 25546, yet the final rule expands consecutive driving hours from 10 to 11. FMCSA's response to the overwhelming body of research—including gold-standard crash studies and its

own data, 65 FR 25544 (Chart 5)—is a vague, unsupported generalization that "modern" CMVs require less exertion to operate than trucks in the 1930s, so there is "little doubt" that they may be driven safely for 11 hours. 68 FR 22471, 22472, 22492, 22502. FMCSA cites *no* evidence for this claim, *cf.* 61 FR 57253 (changes to HOS rules must be "based upon sound scientific research and factual data," not "anecdotal information or intuitive opinions"), and undercuts it by observing that "[t]he high volume and speed of traffic on the Interstates and many other roads require a higher level of driver alertness." 68 FR 22472; *see also* 65 FR 25541; IIHS Comments (1992) (JA 419).

In any event, studies establishing sharply increased crash risk after 8 hours driving and the pronounced spike at 10-11 hours are from the 1980s and 1990s, the heyday of "modern" trucks. Moreover, research demonstrates that "the overall decreased stimulus provided by more comfortable cabs and monotonous driving environments, such as unvarying, high-speed Interstate highways, leads to earlier and more sustained losses of alertness and vigilance by CMV drivers, especially when they have been acutely and/or chronically sleep-deprived." 1997 AHAS (JA 310); *accord* 2000 IIHS (JA 1150). Again, the agency fails to articulate a "rational connection between the facts found and the choice made," *State Farm,* 463 U.S. at 43, and its explanation "runs counter to the evidence" before it. *Chemical Mfrs.*

Ass'n v. EPA, 217 F.3d 861, 866 (D.C. Cir. 2000).

FMCSA admits that it has reversed decades of policy statements about the risks of driving longer hours. To justify its dramatic switch, FMCSA had "to overcome the 'presumption . . . *against* changes in current policy that are not justified by the rulemaking record,'" *Steed,* 733 F.2d at 100 (quoting *State Farm,* 463 U.S. at 42)), and "supply a reasoned analysis." *State Farm,* 463 U.S. at 57 (citation omitted); *accord Ramaprakash v. FAA,* 346 F.3d 1121, 1124 (D.C. Cir. 2003). FMCSA has done neither.

FMCSA's reversal on consecutive driving hours, coupled with the monumental increase in weekly hours allowed under the 34-hour restart provision, effectively "grandfathers" dangerous driving practices the agency has lambasted as responsible for truck-driver fatigue. AHAS Testimony (2000) (JA 1101). The NPRM, for instance, admonished: "While drivers who drive to the maximum number of hours allowed and rest to the minimum number of hours required by the HOS rules may be fatigued, the situation of drivers who are not in compliance is undeniably worse." 65 FR 25558. The agency disapprovingly cited evidence that more than 40% of respondents reported driving more than 10 consecutive hours, PRE (JA 805), a lawful practice under the final rule. The increase in consecutive driving hours will raise the bar still higher for drivers already violating the rules.

HOS limits effectively control the extent to which drivers and carriers take their chances in disobeying the law; the great majority of current violations are clustered in the 10-12 hour range. Given the extraordinary economic pressures, carriers and drivers will quickly adjust to the new maximum. Those willing to exceed HOS limits will drive even more hours than now. 2000 AHAS (JA 1423-24). The heightened crash risk will not evaporate simply because these excess driving hours have now become legal. *See* Smiley & Heslegrave (JA 522) (prevalence of violations "suggests that extending hours of work will lead to increased incidents of drivers falling asleep at the wheel").

FMCSA maintains that increased driving time "can be safely accommodated within the context of a somewhat reduced overall tour of duty." 68 FR 22473, 22492. But FMCSA's reduction of on-duty limits from 15 to 14 hours has no bearing on the safety of driving more consecutive hours and is irrelevant for drivers maximizing driving by alternating 11 hours driving with 10 hours off-duty. Moreover, FMCSA's own Expert Panel found that "a 14-hour work day is excessive." JA 565; *see also* NIOSH (JA 1487) ("Up to five consecutive 12/14-hour shifts . . . creates the potential for excessive fatigue even when 8 hours of sleep per day are obtained."). And FMCSA's reference to a "somewhat reduced overall tour of duty" is disingenuous given the final rule's increases of over 25% in

weekly driving hours and 40% in weekly duty hours.

Finally, citing the RIA, FMCSA contends that the extra hour of driving is safe because the rule affords drivers two additional off-duty hours. 68 FR 22471. Yet, incredibly, the RIA's "model" *excluded the effects of time-on-task*, discarding the effects of increased daily or weekly driving hours. *Id.* 22497. The RIA cannot be relied on to demonstrate the safety of a change whose effects *it assumed away*. FMCSA cites no research to support its assumption that two additional hours off-duty offsets increased fatigue and crash risk from longer hours of driving. Nowhere does FMCSA establish a causal connection between increased off-duty time and the safety of longer driving hours. Extended hours of driving are not tiring *only* because they reduce time available for sleep. FMCSA put it well: "[T]he ability of humans to maintain the levels of vigilance and cognitive performance required for safe driving, or their belief that they can maintain their performance level, is clearly influenced by the time spent performing the task." Literature Review (JA 899); *see also* 2000 AHAS (JA 1427-28); 2000 IIHS (JA 1151-52). Even if there were "uncertainty" about the magnitude of the risk, 68 FR 22497, an agency charged by Congress with making safety its top priority and reducing fatigue-related truck crashes must give safety the benefit of the doubt and not expand driving hours.

D. 34-Hour Restart Provision

The most damaging change to the HOS rules is the provision allowing drivers to "restart" their weekly duty clocks after 34 hours off-duty, which enables drivers to drive and work significantly more hours within a 7- or 8-day schedule. The provision facilitates longer weekly hours by significantly shortening driver recuperative time (now as long as 3 days for drivers who maximize driving hours), allowing drivers to resume driving when the old rules would have required them to rest. The 34-hour restart represents another renunciation of principle because FMCSA substituted it for the mandatory "weekend" it had proposed to help drivers recover from accumulated fatigue and sleep debt. Furthermore, even if the 34-hour off-duty period were mandatory (which it is not), it is insufficient under FMCSA's own reasoning because it does not guarantee that fatigued drivers receive two consecutive nights off-duty.

1. The 34-hour restart permits drivers to drive 77 hours or work 84 hours in 7 days, or to drive 88 hours or work 98 hours in 8 days. *As a result, a driver can drive nearly 30%, or work 40%, more hours in 7 or 8 days than permitted under prior rules.* FMCSA's failure to disclose forthrightly the extent of the massive increases in weekly driving/working hours enabled by the 34-hour restart is reason alone to vacate the rule. *See Independent U.S. Tanker Owners Comm. v. Lewis,*

690 F.2d 908, 931 (D.C. Cir. 1982) ("Agency candor is crucial to the accountability that the APA is designed to ensure."); *accord Competitive Enter. Inst. v. NHTSA,* 956 F.2d 321, 327 (D.C. Cir. 1992); *see also State Farm,* 463 U.S. at 43 (rule arbitrary and capricious where agency "entirely fail[s] to consider an important aspect of [a] problem").

Even ATA's proposal was more moderate than the final rule. Its 14-day averaging proposal limited to 140 the number of hours that drivers could drive or work in 14 days, 68 FR 22467, 22475, 22491—17% more than the 120 hours allowed under the old rules and the NPRM. FMCSA noted that ATA had offered no scientific support for this striking increase, *id.* 22467, and admitted that "[i]t was not clear whether this alternative would reduce fatigue-related incidents." *Id.* 22491. But because FMCSA did not cap hours, its rule authorizes drivers *to drive 154 hours or work 168 hours in 14 days*—10% more driving hours and 20% more duty hours than *industry*'s 14-day proposal. The change effectively removes weekly limits.

No evidence suggests that this staggering increase is safe. FMCSA recognizes that no research supports statutory exemptions that now permit a 24-hour restart for narrow industry sectors. 65 FR 25559. Similarly, FMCSA found no evidence a decade ago to support a universal 24-hour restart. 58 FR

6937, 6938 (1993); *accord* Literature Review (JA 912). Nor does the record support the 34-hour restart, with its serious ramifications for weekly hours. FMCSA's Expert Panel stated the obvious: "An 84-hour work week is more than twice the recognized 'normal' work week and is excessive . . . ." JA 566; *accord* NIOSH (JA 1486).

FMCSA did not justify this additional policy reversal. The 60- and 70-hour weekly limits have existed since the 1930s. 65 FR 25547. The NPRM cited studies showing increased fatigue-related truck-crash risk from longer weekly driving hours, *id.* 25555-56, and emphasized "concerns about a 36-hour reset that would allow drivers to accumulate up to 92 hours on-duty within a seven-day period, particularly for night driving." *Id.* 25556 (quoting Smiley & Heslegrave (JA 531)). The final rule ignores this research. An FHWA-sponsored study—also ignored—found "there was no objective evidence of driver recovery of performance" even after 36 hours off-duty. Wylie et al., *Commercial Motor Vehicle Driver Rest Periods and Recovery of Performance* (1997) (JA 500-03).

Once again, the rule "grandfathers" driving practices FMCSA previously condemned. The NPRM noted disapprovingly that 25% of drivers reported working at least 75 hours in the last 7 days. 65 FR 25558. Yet that schedule fits easily within the final rule, and even the top 10% of drivers working more than 90

hours, *id.,* would exceed the new maximum by only a few hours. These "unfortunate" violations, denounced by FMCSA for making driver fatigue "undeniably worse," *id.*; JA 805, are now magically remedied by a rule that legitimizes the worst excesses of the old system FMCSA decried. The 34-hour restart enables carriers to work drivers so many more hours that it will require 58,500 *fewer* long-haul drivers, saving the industry over $1 billion annually, compared to full compliance with existing rules. 68 FR 22495 (Tables 5 & 6); RIA, Exhs. 9-1 & 9-2 (JA 1732-33).

2. FMCSA's conclusion that the 34-hour restart "provides the most favorable combination of increased driver alertness and reduced fatigue-related incidents," 68 FR 22479, is indefensible. The 34-hour off-duty period is *shorter* than drivers operating at the maximum now receive. Drivers who burn hours at the maximum rate can resume driving after 34 hours off-duty, instead of getting 3 days off, as the old rules required. *Id.* 22502, 22505; page 27, *supra* (graphs). Thus, drivers operating at, or close to, the maximum will *lose* off-duty time critical for recovery.

Nothing in the rule even requires that drivers receive a weekly 34-hour off-duty period. *See id.* 22516 (§ 395.3(c)) ("Any period of [7 or 8] consecutive days *may* end with the beginning of any off duty period of 34 or more consecutive

hours") (emphasis added). The 34-hour break is only an option enabling drivers who have run out of weekly hours to add more. Drivers working their 60th hour at the end of their 7th day of work, or their 70th hour at the end of their 8th, may continue driving with no extended off-duty time—working week-in and week-out with only 10 hours off-duty between shifts. Yet FMCSA concedes that "drivers should be provided recovery periods after a sustained period of daily work to avoid the build-up of cumulative fatigue and/or sleep deprivation," *id.* 22478; nightshift workers accumulate a sleep debt, 65 FR 25554; *see also id.* 25561-62; RIA (JA 1698-99), and "a single night's sleep" is insufficient to "pay it back." 65 FR 25555; PRE (JA 805).

The final rule acknowledges that night driving "can lead to sleep deprivation and consequent build up of sleep debt," but says that need "not always" occur "*if* carriers carefully monitor schedules to avoid too many successive nights of work and *if* drivers follow proper sleep regimen." 68 FR 22479 (emphasis added). FMCSA provides no basis for optimism that carriers and drivers will *voluntarily* forgo irregular schedules and frequent night driving—hallmarks of industry driving practices—or for concluding that *no* drivers need a weekly recovery period. It was precisely because voluntary practices did not guarantee necessary weekly time off that FMCSA initially proposed the mandatory "weekend." *See* 65

FR 25562 ("driver[s] should be afforded more opportunity for daily and *weekly* sleep") (emphasis added).

3. Even for drivers who receive it, 34 hours off-duty does not guarantee two consecutive nights off-duty, a need FMCSA emphasized, 65 FR 25555-56; JA 805, and the Expert Panel called "absolutely minimal." JA 584. The final rule cited research documenting the necessity of two "nights" recovery sleep, but nevertheless concluded that 34 hours off-duty suffices because it allows "at least *two sleep periods,*" 68 FR 22479 (emphasis added). But FMCSA has emphasized that "two opportunities to sleep between midnight and 6:00 a.m. . . . is different than [two] rest periods." Roundtable Two (JA 1244). And the rule does nothing to ensure that drivers actually will take "two sleep periods," when they are off-duty less than 1½ days with only one night off. In renouncing the NPRM's mandatory "weekend," the final rule not only denies sleep-deprived drivers the weekly recovery FMCSA previously championed, but also eliminates a key element of its approach to minimizing the risks of night driving, 68 FR 25557-58—a risk totally ignored in the final rule.

FMCSA asserts that a two-night "weekend" requirement "assumes that every driver is subject to weeklong sleep deprivation" and that it "may have overreached trying to prevent the most extreme abuses by imposing restraints on

the whole driver population." *Id.* 22477. The NPRM "assumed" no such thing, but reflected FMCSA's own findings that drivers *at the mean* are working 11.35 hours per day and 64.3 hours per week, PRE (JA 805-06, 814-16); Analytical Support (JA 1025, 1027)—far above the average American workweek. But even if FMCSA had "overreached," eliminating the mandatory "weekend" proposal altogether would be unjustified. The agency could have required an extended recovery period only for long-haul drivers. Or because the "consensus" of the "scientific community worldwide" is that "two full nights of sleep may be required to allow near full recovery following protracted periods of sleep loss or sleep restriction," Vespa et al., *Options for Changes to Hours of Service for Commercial Vehicle Drivers* (1998) (JA 602), FMCSA could have required two nights off-duty within any 7-day period after 42 hours or 4 consecutive nights on-duty. *See id.* 609-10, *cited in* Literature Review (JA 916-18). To do *nothing* to provide fatigued drivers a weekly off-duty period because of concern about overinclusiveness is arbitrary and capricious, *see Steed,* 733 F.2d at 99 (agencies must explain rejection of reasonable alternatives), and violates the agency's mandate to make safety its highest priority.

FMCSA dismissed the two nights-off proposal as "unworkable," 68 FR 22479, uncritically accepting industry objections that it would disrupt operations

and force traffic onto highways during daylight. *Id.* 22477. FMCSA ignored IIHS's rebuttal that prior rules *already* required drivers to take several days off, including 3 nights, if they reached weekly limits in 5 days. 2000 IIHS (JA 1153). The agency offered no reason why carriers cannot replace one driver taking his required weekend with another, just as they must replace drivers who have run out of weekly hours. Even if some traffic were displaced to daylight hours, that result would *promote* safety, given the elevated risks of night driving. FMCSA officials concede that the impact would be "more a congestion delay issue, than . . . an accident issue" because "there are relatively few accidents during congestion, because nobody is going anywhere, if you look at the data." Roundtable Two (JA 1306-07). The agency's cavalier abandonment of the "absolute minimum" weekly recovery period because some unknown quantity of nighttime driving might shift to daytime does not make a "rational connection between the facts found and the choice made." *State Farm,* 463 U.S. at 43.

E. Electronic Onboard Recorders

Although Section 408 mandated that FMCSA "deal[] with . . . automated and tamper-proof recording devices," FMCSA refused to do so. Indeed, the agency has refused to address it for 15 years, despite a 1988 statute requiring it to promulgate a rule addressing HOS compliance, including the use of onboard

recorders. *See supra* note 2. Instead, bowing to industry pressure, FMCSA decided "not to adopt regulations on EOBRs *at this time*," 68 FR 22488 (emphasis added), claiming the need to conduct further research. *Id.* 22489. Its refusal to resolve the matter and adopt an EOBR mandate is contrary to law and arbitrary and capricious.

As FMCSA recognizes, the benefits of HOS limits are attainable only if the rules are followed. *Id.* 22500-01; 65 FR 25585, 25596. The NPRM criticized motor carriers for refusing to acknowledge "the widespread noncompliance with both the HOS restrictions and the preparation of RODS." 65 FR 25567; *see also id.* 25558, 25570. It agreed with NTSB that EOBRs would reduce violations by providing "driver-unalterable data" making falsification difficult, *id.* 25563, 25570, and by changing attitudes toward compliance. *Id.* 25564, 25596.[9]

FMCSA's reasons for its about-face are unpersuasive. First, its claim that "neither the costs nor the benefits of EOBR systems are adequately known," *id.* 22488, is implausible, given the agency's 15-year history of dealing with carriers voluntarily using EOBRs. *See* 49 C.F.R. § 395.15. Even before the computer-

[9] Noncompliance with the old rules was so stark that FMCSA calculated it would cost nearly $2 billion just to bring long-haul drivers into full compliance with the *old* rules, while full compliance by long-haul drivers with the new, more permissive rules will cost less than half that—$882 million. 68 FR 22499 (Table 14).

technology explosion, the agency noted that "a number of these devices are on the market." 1990 FHWA (JA 165). The final rule identified vendors that could meet an EOBR requirement. 68 FR 22488; *e.g.,* VDO (JA 1468) (EOBRs available for $300 as original equipment or $500-$600 for retrofits); *see also* IIHS Comments (2000) (JA 1612, 1614); IIHS Letters (2002) ("2002 IIHS") (JA 1628-33).

FMCSA did not explain why it was reasonably confident of the NPRM's $1,000 cost estimate, 65 FR 25575, but three years later it is so uncertain about the costs of technologies in widespread use that it cannot proceed. FMCSA remarked only that "[c]ost estimates vary enormously, mainly because there is no significant market for such devices at the moment and thus no hard prices available." 68 FR 22488. Although cost is often uncertain when an agency contemplates mandating a safety device, FMCSA is in a far better position to evaluate prices here than in the technology-forcing context, where agencies require technologies still in development. *Cf. NRDC v. Reilly,* 983 F.2d 259, 268 n.12 (D.C. Cir. 1993) ("It is the nature of technology-forcing sections that technical problems, including those involving safety, are ironed out in the course of the statutorily spurred process of research and development."); *AFL v. OSHA,* 965 F.2d 962, 985-86 (11th Cir. 1992) (finding no need for delay in adopting "off-the-shelf" technology rather than forced technology).

FMCSA's feigned ignorance about EOBRs' safety benefits is even more untenable. FMCSA asserted that "the amount of cheating that could be deterred by EOBRs is unknown" and depends in part on their tamper-resistance and ability of roadside enforcement to access information. 68 FR 22488. This information is "unknown" only because FMCSA did not test available EOBRs, *id.*, although it believed devices available 15 years ago were secure. 53 FR 38667. In May 2000, the NPRM "conservative[ly]" predicted EOBRs would reduce fatigue-related crashes by 15%. 65 FR 25569. FMCSA's new-found doubts ring hollow.[10]

FMCSA's next excuse was that it might need to adopt a design, rather than a performance, standard so that enforcement officials would not waste time mastering procedures for retrieving information from different EOBRs. 68 FR 22488. In 1988, however, the agency found no evidence that uniform formats were needed and concluded that regulatory requirements should permit innovation by manufacturers. 53 FR 38668. FMCSA does not explain why a design standard might be necessary now after 15 years of voluntary use under a performance standard. *See* 49 C.F.R. § 395.15.

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[10] FMCSA also ignored efficiency gains from an EOBR requirement. Because of the 4-fold increase in estimated burden-hours spent on RODS, *see* pages 29-30, *supra,* the paperwork savings from an EOBR mandate would be significantly higher than the NPRM estimate. *See supra* note 4; 2002 IIHS (JA 1629, 1632).

In addition, FMCSA cited industry's "privacy" concerns about possible subpoenas for EOBR data in personal-injury lawsuits. The argument is a red herring pushed by industry for years—first with respect to RODS and now EOBRs. Even if avoiding discovery of relevant data were ever a legitimate privacy concern, privacy expectations of motor carriers and drivers are much diminished in this highly-regulated industry. *New York v. Burger,* 482 U.S. 691, 702 (1987). Nearly 25 years ago, FHWA rejected calls to eliminate RODS on privacy grounds because their purpose is to monitor compliance with federal law. 45 FR 82284, 82289 (1980). EOBRs, as the NPRM affirmed, are simply "a more effective form of the self-monitoring and -reporting drivers have been required to perform for many decades." 65 FR 25563.

Finally, FMCSA said that it lacked "the support of the transportation community at large" to mandate EOBRs—hardly surprising when the resistance is really "opposition to the prospect of having to adhere to the driving hour limits." 2000 IIHS (JA 1148). More and more carriers have sophisticated systems to track truck movements, yet they insist on using RODS for HOS monitoring. 2002 IIHS (JA 1628, 1632). FMCSA invited carriers to use GPS systems for HOS monitoring, 63 FR 16697 (1998), yet only one accepted, 65 FR 5927, suggesting that concealing noncompliance, not cost, is the real objection. Congress did not

charge FMCSA to seek "a sort of compromise" between industry and safety groups, *see American Horse Protection Ass'n v. Lyng,* 812 F.2d 1, 6 (D.C. Cir. 1987), but to impose measures to reduce fatigue-related truck crashes.

F. Failure to Protect Driver Health

FMCSA is required by statute to ensure, at a minimum, that drivers' responsibilities "do not impair their ability to operate the vehicles safely"; that drivers' "physical condition" is "adequate to enable them to operate the vehicles safely"; and that driving "does not have a deleterious effect on the physical condition" of drivers. 49 U.S.C. § 31136(a)(2), (3) & (4). The final rule does not satisfy, or even acknowledge, these mandates. The cost-benefit analysis likewise failed to consider the rule's effect on driver health. Comments submitted during the rulemaking discussed the serious adverse health consequences of drivers' long and irregular working hours and urged FMCSA to honor its statutory obligation. *E.g.,* 1997 AHAS (JA 314-25); 1997 CRASH (JA 487-88). This omission alone renders the final rule arbitrary and capricious and contrary to law. *See United Mine Workers v. Dole,* 870 F.2d 662, 673 (D.C. Cir. 1989) (complete absence of discussion of statutory requirement leaves court "no alternative but to conclude that the [agency] simply failed to take account of this statutory limitation on [its] authority").

G. FMCSA's Conclusion That the Final Rule Improves Truck Safety is Demonstrably Unfounded.

Based on the RIA, FMCSA declared the final rule would produce both positive safety benefits and net benefits compared to existing rules with full compliance, and therefore, that it satisfies statutory mandates. 68 FR 22500-01, 22511; *see id.* 22496 (Table 10), 22500 (Table 17). FMCSA reliance on the RIA is problematic both procedurally and substantively.

1. Although the RIA employed a radically different analysis from the NPRM and accompanying PRE, including a complex and untested "model," FMCSA withheld it from the public until after issuing the rule. FMCSA's regulatory "bait-and-switch" patently violated the APA. This Court repeatedly has admonished agencies that "even in the most informal rulemaking context, . . . the most critical factual material that is used to support the agency's position on review must have been made public *in the proceeding* and exposed to refutation." *Air Transport Ass'n v. FAA,* 169 F.3d 1, 7 (D.C. Cir. 1999). The "requirement of public exposure of the assumptions and data incorporated into the analysis and the acceptance and consideration of public comment" serve as "safety valves" to ensure that "ultimate responsibility for the policy decision remains with the agency rather than the computer" or, here, the contractor. *Sierra Club v. Costle,* 657 F.2d

298, 334 (D.C. Cir. 1981). These "safety valves" were absent in this case. Safety groups relied on the analysis, methodology, and assumptions of the NPRM and PRE and had no opportunity to refute the RIA's completely different assumptions and analysis. This Court has refused to rely on portions of studies on which an agency denied petitioners opportunity to comment. *E.g., Small Refiner Lead Phase-Down Task Force v. EPA,* 705 F.2d 506, 541 (D.C. Cir. 1983). It should refuse here to consider the RIA as support for the final rule.

2. Nowhere was the RIA in greater need of exposure to public comment than in its "modeling" of crash-reduction benefits. First, there was no justification for using the SPM to evaluate crash risk because the study on which the SPM was based—which shows that more sleep tends to improve performance—inadequately considered time of day, and its authors conceded its implications for truck driving "are not yet known." Balkin (JA 1083, 1091). Second, RIA's model counter-factually assumes that drivers take their rest in single blocks, *see* Appendix F (JA 1750-68), even though the rule maintains the sleeper-berth exception and the RIA itself concedes that "continuity of sleep is significant." *Id.* 1701.

Third, and most critically, the model does not even *purport* to take into account the effect of time-on-task—*i.e.,* the fatigue and risk consequences of driving or working the longer hours permitted by the new rule. 68 FR 22497; RIA

(JA 1701, 1715, 1738-39). The model does not distinguish between a truck driver sitting awake on a couch for 14 hours and one who drives 11 hours and loads and unloads cargo for an additional 3, or between a driver who drives 88 hours (or works 98) in 8 days and one who is off-duty all that time watching television. The RIA simply discards the exponentially increased crash risk that FMCSA concedes comes from extended driving hours because of "uncertainty" about the "magnitude" of the time-on-task effect "for very long hours of driving." JA 1738; 68 FR 22497.

In fact, study after study analyzing actual truck crashes, along with FMCSA's own data published in the NPRM, have consistently shown an exponentially increased risk from driving more than 8 hours. *See, e.g.,* 65 FR 25544 (Chart 5); Lin et al., *Modeling the Safety of Truck Driver Service Hours Using Time-Dependent Logistic Regression* (1993) (JA 752-53 & Figure 2). Any so-called "uncertainty" arises only because studies have included (relatively) small numbers of drivers driving for longer than 9-10 hours. RIA (JA 1738-39). These sample sizes do not make it reasonable to assume that a sharply elevated driving risk after 8-9 hours will suddenly drop into the normal range after 10-11 hours. *See* IIHS Testimony, Roundtable One (JA 1189-91) (despite smaller numbers for 10th driving hour, 95% confidence interval shows increased risk between 3.6-fold

and 9.3-fold); 2000 IIHS (JA 1151). FMCSA's approach is akin to concluding that it is safe to jump off the roof of a 75-story building because that risk cannot be "modeled" since most people who die jumping off buildings jump from lower floors.

This Court accords no deference to a "scientific model" that does not bear a "rational relationship to the characteristics of the data to which it is applied," *City of Waukesha v. EPA,* 320 F.3d 228, 248 (D.C. Cir. 2003) (citations omitted); *accord Costle,* 657 F.2d at 333, or that is "so oversimplified that the agency's conclusions from it are unreasonable." *Small Refiner,* 705 F.2d at 535. By disregarding the effects of the very changes to the final rule most in need of justification—changes that contradict its own data, a wealth of scientific studies, longstanding agency policy, and its safety mandate—FMCSA acted in a classically arbitrary and capricious fashion. *See United States Air Tour Ass'n v. FAA,* 298 F.3d 997, 1018 (D.C. Cir. 2002) (FAA unjustified in excluding non-tour aircraft from noise model when it lacked evidence that their noise is minimal and its own data suggested otherwise).[11]

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[11] The arbitrariness of the RIA's analysis was compounded by its use of FMCSA's lower 8.15% estimate of fatigue-related crashes, which is based on police reports that FMCSA agrees understate the incidence of fatigue, 65 FR 25545; RIA (JA 1703), and by its assumption of full compliance with the final rule when the absence of an EOBR mandate will perpetuate widespread flouting of

This Court need not check common sense at the door when confronting an agency's model. If drivers are fatigued after driving 8 consecutive hours and even more fatigued after 9 or 10, then they will be more tired still when permitted to drive for 11 consecutive hours. If drivers are fatigued now after working 60 or 70 hours in 7 or 8 days, they will be still more exhausted when they work 84 to 98 hours in the same time frames. Such dramatic increases are not the kind of "improvements" rationally made by an agency with safety as its preeminent mission. The final rule fails miserably to satisfy statutory mandates and represents an abdication of duty that will lead to many more avoidable deaths and injuries on the nation's highways.

HOS rules.

CONCLUSION

The Court should vacate the final rule and remand to FMCSA for promulgation of a new final rule.

Respectfully submitted,

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RULE 32(a)(7)(C) CERTIFICATE

I hereby certify that the foregoing Final Brief for Petitioners complies with the type-volume limitation of Federal Rule of Appellate Procedure 32(a)(7)(B). The brief is composed in a 14-point proportional typeface, Times New Roman. As calculated by my word processing software (WordPerfect), the Brief (exclusive of those parts permitted to be excluded under the Federal Rules of Appellate Procedure and the D.C. Circuit Rules) contains 13,784 words. The word processor does not recognize the three graphs on page 27 of the brief. When the words contained in those graphs are manually added, the word-count is 14,000.

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CERTIFICATE OF SERVICE

The undersigned counsel certifies that on this 27th day of February, 2004, she caused two copies each of the foregoing Final Brief for Petitioners to be served by first-class U.S. mail, postage prepaid, on the following:

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