

RoboTruckers:

The Double Threat of AI for Low-Wage Work

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Your 60-second trucking primer

Truckers as human infrastructure

“If you got it, a truck brought it”
2 million long-haul truckers

Political economy of trucking

Deregulation → high competition
Driver shortage and turnover

Trucking culture

95% male, autonomous, resistant, romantic
Trucking as manhood



01 02 2008
 (Month) (Day) (Year)

USA Truck, Inc.
 3200 Industrial Park Rd.
 Van Buren, AR 72956

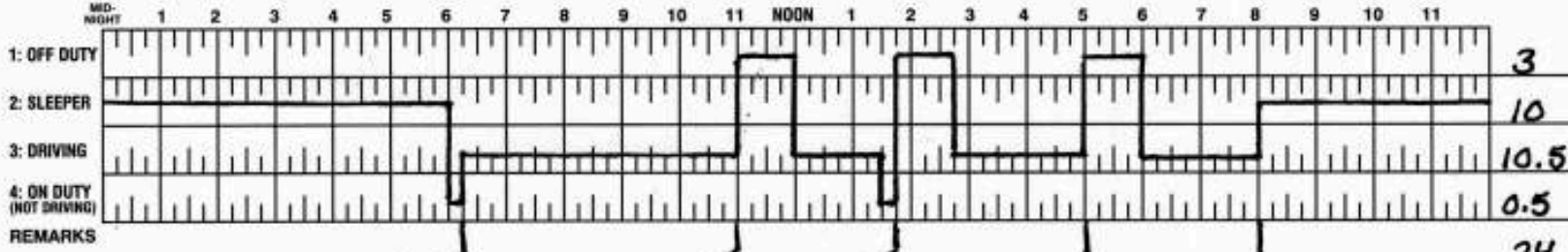
DOE JOHN
 (Driver's LAST name - Printed) (Driver's FIRST name - Printed)

If multiple off-duty days, enter the end date here:

20
 (Month) (Day) (Year)

123456789
 (Employee Number)

(Co-Driver's LAST name - Printed) (Co-Driver's FIRST name - Printed)



REMARKS

LITTLE ROCK, AR PTI
 DALLAS, TX LUNCH
 CORSICANA, TX LOADING
 HOUSTON, TX DINNER
 ORANGE, TX OFF DUTY

3
 10
 10.5
 0.5
 24
 Total Hours

Hours Worked Last 7 Days
1. 0
2. 0
3. 0
4. 8
5. 9.5
6. 7.25
7. 6
Yesterday
Total Hours
30.75
70 Hours Less Total Hours Equals Hours Available Today
39.25
Hours Worked Today
11

123456789
 (Pro or Shipping Number)

(Pro or Shipping Number)

651
 (Total Miles Driving Today)

JOHN DOE
 (Driver's Signature in Full)

I certify these entries are true and correct.

6788
 (Tractor Number)

54321
 (Trailer Number 1)

(Trailer Number 2)

● Driver's Daily Vehicle Inspection Report ●

DATE 1-2-08

(Tractor Number) 6788

(Trailer Number 1) 54321

(Trailer Number 2)

- I detect no defect or deficiency in this motor vehicle as would be likely to affect the safety of its operation or result in its mechanical breakdown.
- I detect and list defects or deficiencies in this motor vehicle as would be likely to affect the safety of its operation or result in its mechanical breakdown.

Remarks _____

Driver Making Report _____

- Defects corrected.
- Defects need not be corrected for safe operation of vehicle.



MECHANICS SIGNATURE _____

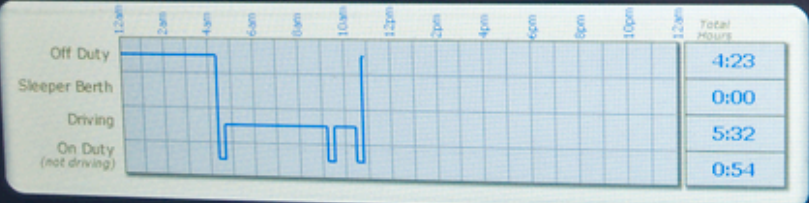
DRIVER'S SIGNATURE _____



Home » eDriver Logs » Review HOS
Summary | 1 Day | 7 Day | 8 Day | 15 Day

1 Day Graph For:

Date: 12/9/2009, Terminal Start Time 12:00am (PST), Kms Driven 396.2



Available Driving: 7:27
Available On Duty: 7:30

Current Sleeper Berth: 0:00
Previous Sleeper Berth: 0:00

3Km N of VERNON, BC

12/9/2009 10:49 AM

“I resent the need for a **black box** on my truck to track what I am doing. I am a safe and honest driver.”

“I feel that I do not need a **federal baby-sitter** in the truck.... I know when I am tired and need to sleep without a black box to tell me when to sleep.”

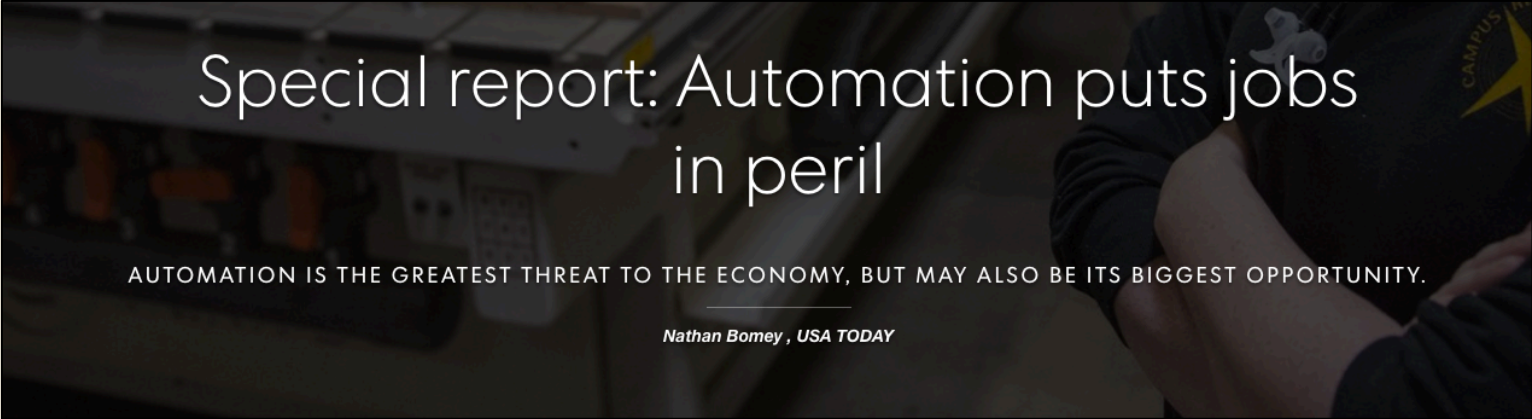
“**You know who pays the payments on that truck? Me.** Who pays the insurance? Me. Who pays the cargo and liability? Me. Who pays for the fuel? Me. I’m not putting shit in my truck ... where were you when I was behind on my payments because I had engine trouble ... who paid that? Me. If I have an issue ... who took care of it? Me. Wasn’t the government. ... **You can kiss my ass.**”



	MCP50	MCP100	MCP110	MCP200
AMBER Alert Highway Network	✓	✓	✓	✓
Analytics Manager	✓	✓	✓	✓
Critical Event Reporting	✓	✓	✓	✓
Fault Monitoring	✓	✓	✓	✓
Geo-Fence Capability	✓	✓	✓	✓
GeoServices	✓	✓	✓	✓
Hours of Service	✓	✓	✓	✓
In-Cab Navigation	✓	✓	✓	✓
In-Motion User Interface	✓	✓	✓	✓
On-Board Application Help	✓	✓	✓	✓
On-Board Tutorials	Text-based	Text-based	Text-based	Video
Performance Monitoring with Fuel Manager	✓	✓	✓	✓
Predictive Performance Service	✓	✓	✓	✓
Services Portal	✓	✓	✓	✓
Text-to-Speech Capability	✓	✓	✓	✓
Text and Macro Messaging	✓	✓	✓	✓
Vehicle Inspection Report	✓	✓	✓	✓
Vehicle Location Data	✓	✓	✓	✓
Audio Delivery		✓	✓	✓
Driver Workflow	Coming soon	✓	✓	✓

“A computer does not know when we are tired, fatigued, or anything else. Any piece of electronics that is not directly hooked up to my body cannot tell me this.” (regulatory comment)

Robot, take the wheel?



Special report: Automation puts jobs in peril

AUTOMATION IS THE GREATEST THREAT TO THE ECONOMY, BUT MAY ALSO BE ITS BIGGEST OPPORTUNITY.

Nathan Bomey, USA TODAY

What Jobs Will the Robots Take?

Nearly *half* of American jobs today could be automated in "a decade or two," according to new research. The question is: Which half?

DEREK THOMPSON | JAN 23, 2014 | BUSINESS



Where machines could replace humans—and where they can't (yet)

By Michael Chui, James Manyika, and Mehdi Miremadi

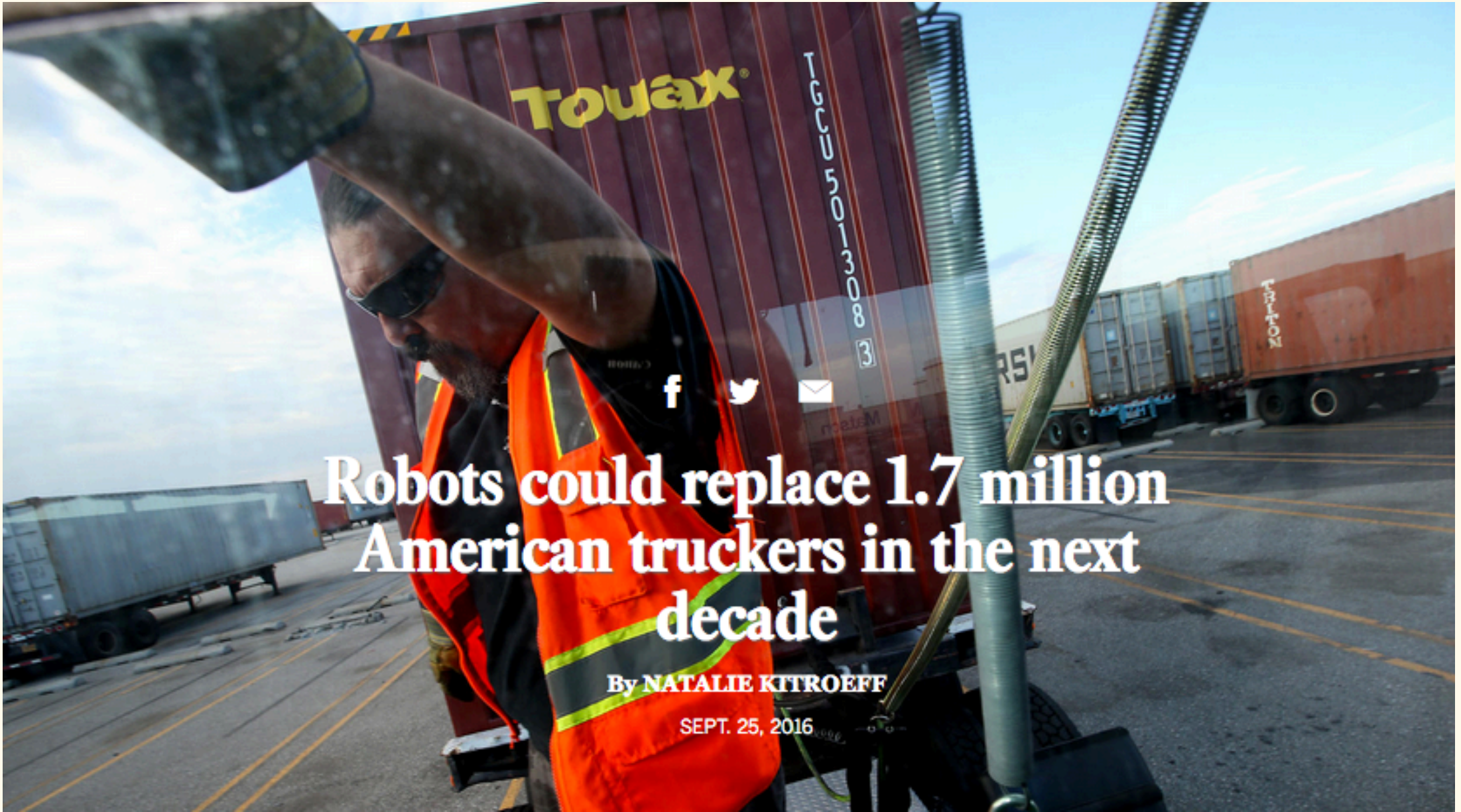
JOB

Will Your Job Be Done By A Machine?

May 21, 2015 · 4:08 PM ET

QUOCTRUNG BUI



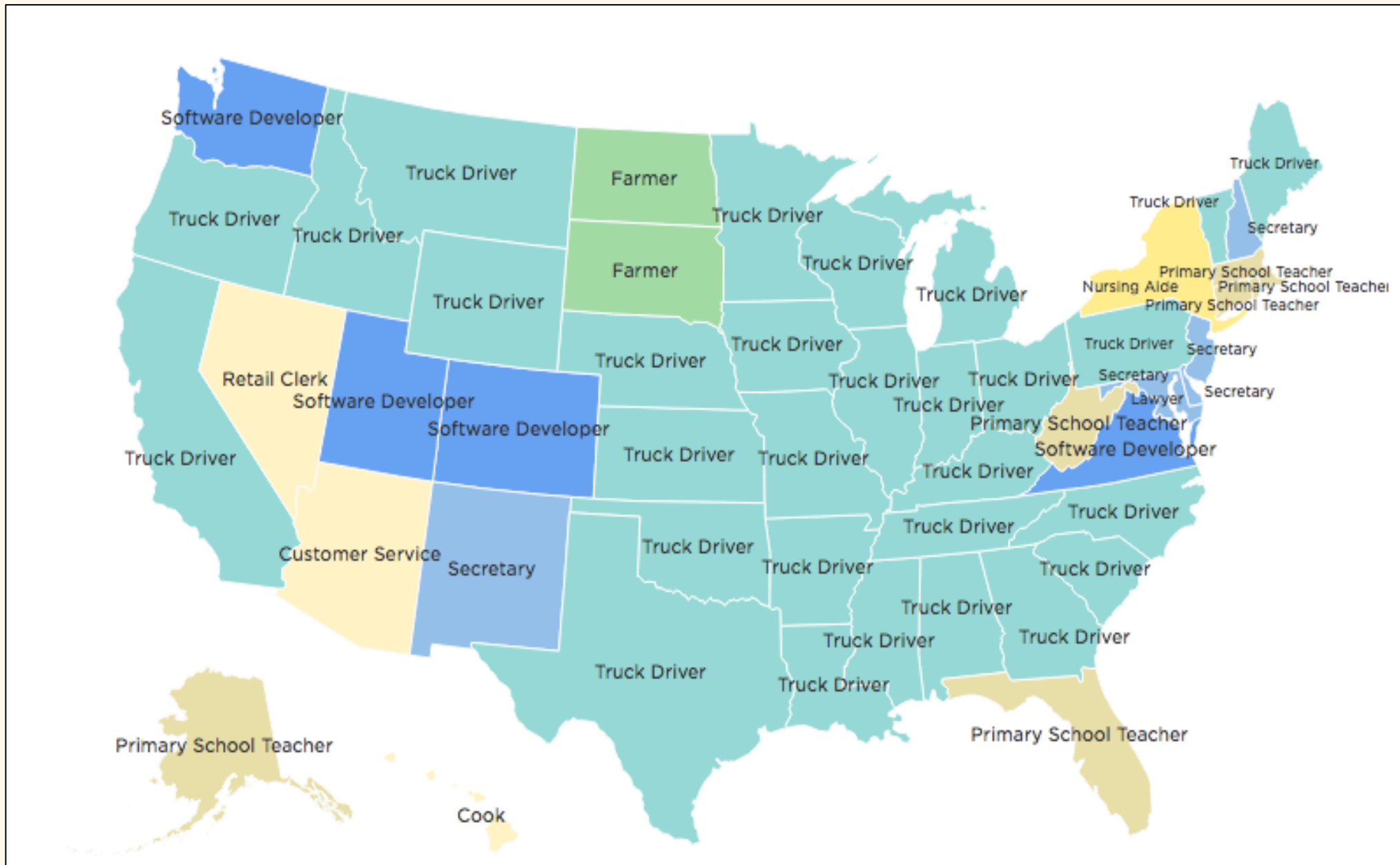


f t e

Robots could replace 1.7 million American truckers in the next decade

By NATALIE KITROEFF

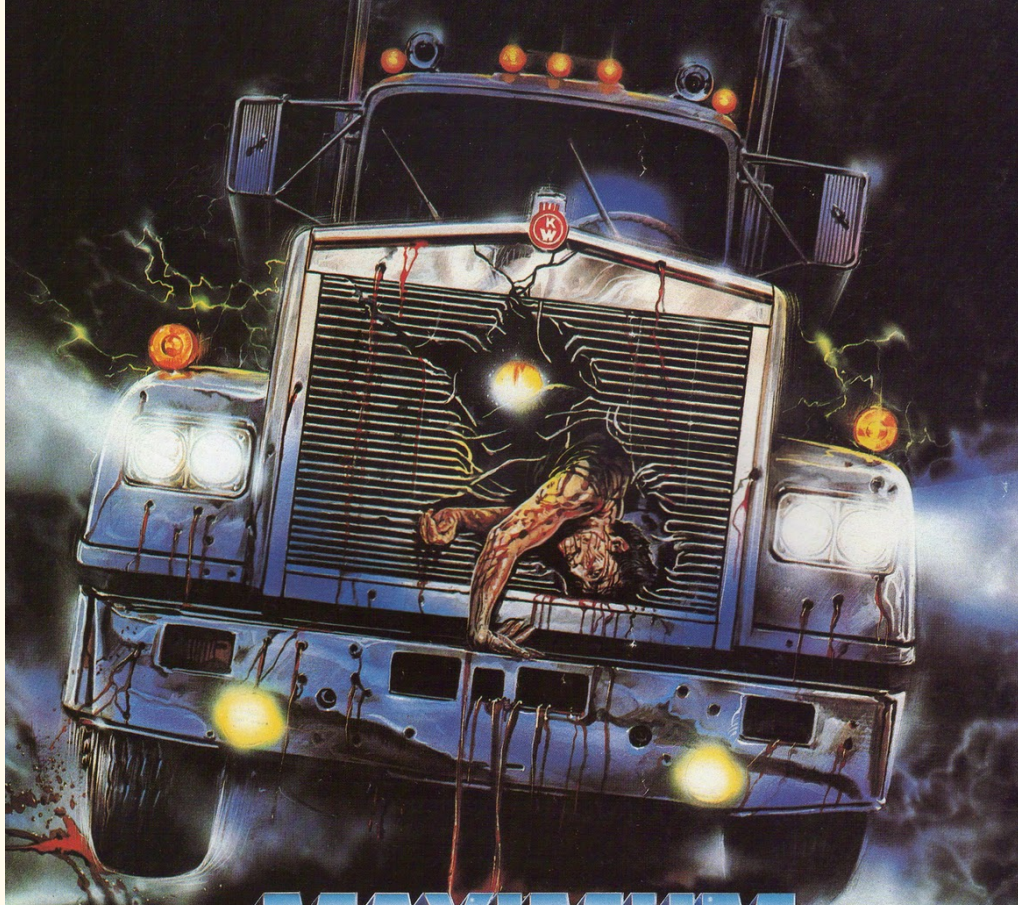
SEPT. 25, 2016



A slope, not a cliff

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Wielding Rocks and Knives, Arizonans Attack Self-Driving Cars



A Waymo autonomous vehicle in Chandler, Ariz., where the driverless cars have been attacked by residents on several occasions. Caitlin O'Hara for The New York Times

3 models of integration

(I) the handoff: passing the baton

Level	Name	Narrative definition	Execution of steering and acceleration/ deceleration	Monitoring of driving environment	Fallback performance of <i>dynamic driving task</i>	System capability (<i>driving modes</i>)	BASf level	NHTSA level
Human driver monitors the driving environment								
0	No Automation	the full-time performance by the <i>human driver</i> of all aspects of the <i>dynamic driving task</i> , even when enhanced by warning or intervention systems	Human driver	Human driver	Human driver	n/a	Driver only	0
1	Driver Assistance	the <i>driving mode</i> -specific execution by a driver assistance system of either steering or acceleration/deceleration using information about the driving environment and with the expectation that the <i>human driver</i> perform all remaining aspects of the <i>dynamic driving task</i>	Human driver and system	Human driver	Human driver	Some driving modes	Assisted	1
2	Partial Automation	the <i>driving mode</i> -specific execution by one or more driver assistance systems of both steering and acceleration/deceleration using information about the driving environment and with the expectation that the <i>human driver</i> perform all remaining aspects of the <i>dynamic driving task</i>	System	Human driver	Human driver	Some driving modes	Partially automated	2
Automated driving system ("system") monitors the driving environment								
3	Conditional Automation	the <i>driving mode</i> -specific performance by an <i>automated driving system</i> of all aspects of the <i>dynamic driving task</i> with the expectation that the <i>human driver</i> will respond appropriately to a <i>request to intervene</i>	System	System	Human driver	Some driving modes	Highly automated	3
4	High Automation	the <i>driving mode</i> -specific performance by an <i>automated driving system</i> of all aspects of the <i>dynamic driving task</i> , even if a <i>human driver</i> does not respond appropriately to a <i>request to intervene</i>	System	System	System	Some driving modes	Fully automated	3/4
5	Full Automation	the full-time performance by an <i>automated driving system</i> of all aspects of the <i>dynamic driving task</i> under all roadway and environmental conditions that can be managed by a <i>human driver</i>	System	System	System	All driving modes		

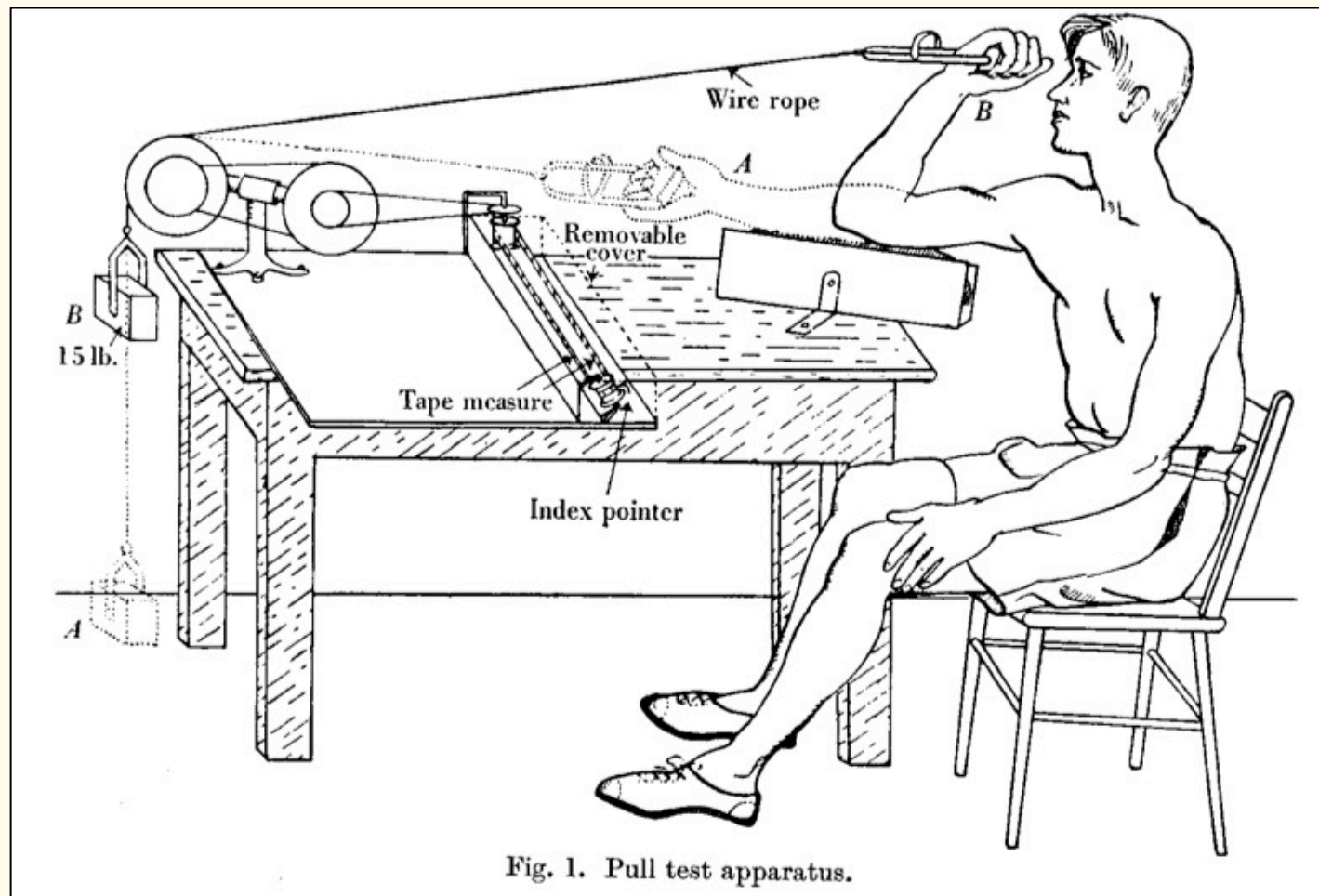


Fig. 1. Pull test apparatus.

“By taking away the easy parts of his task, automation can make the difficult parts of the human operator’s task more difficult.”

- Bainbridge (1983)

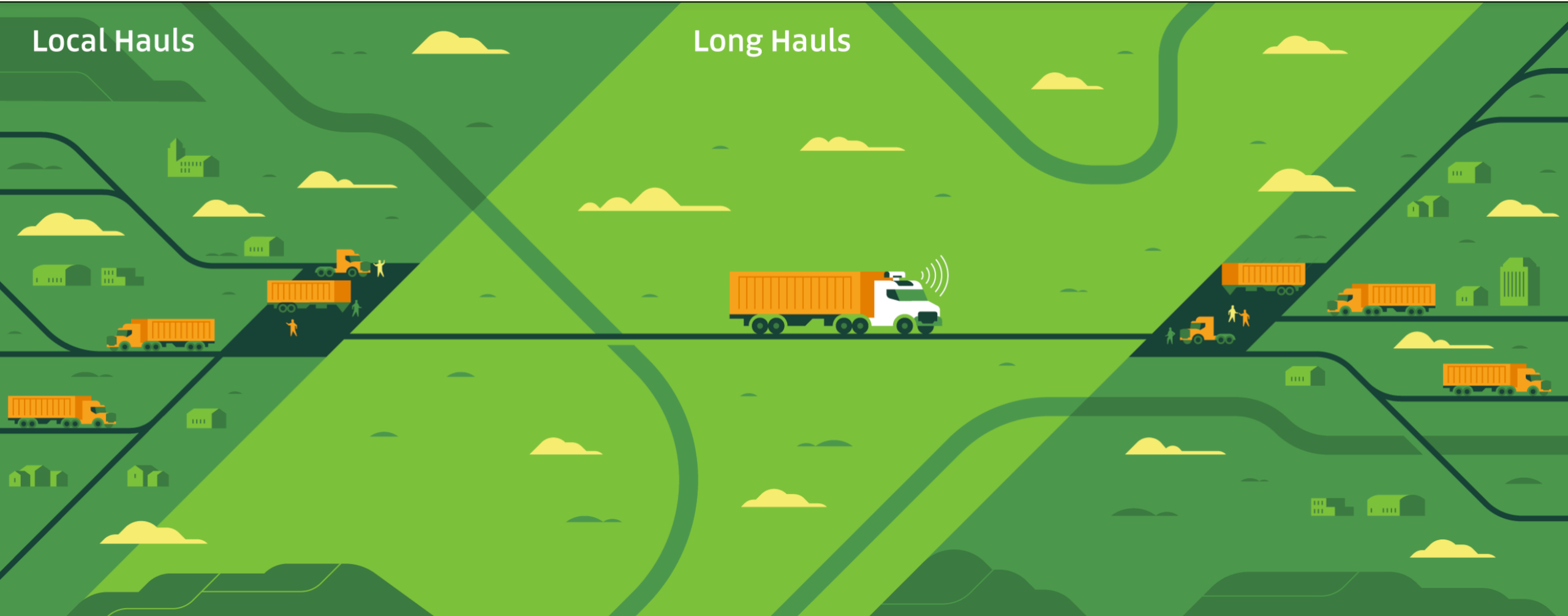
(2) network coordination: divide and conquer

Uber's Self-Driving Trucks Hit the Highway, but Not Local Roads



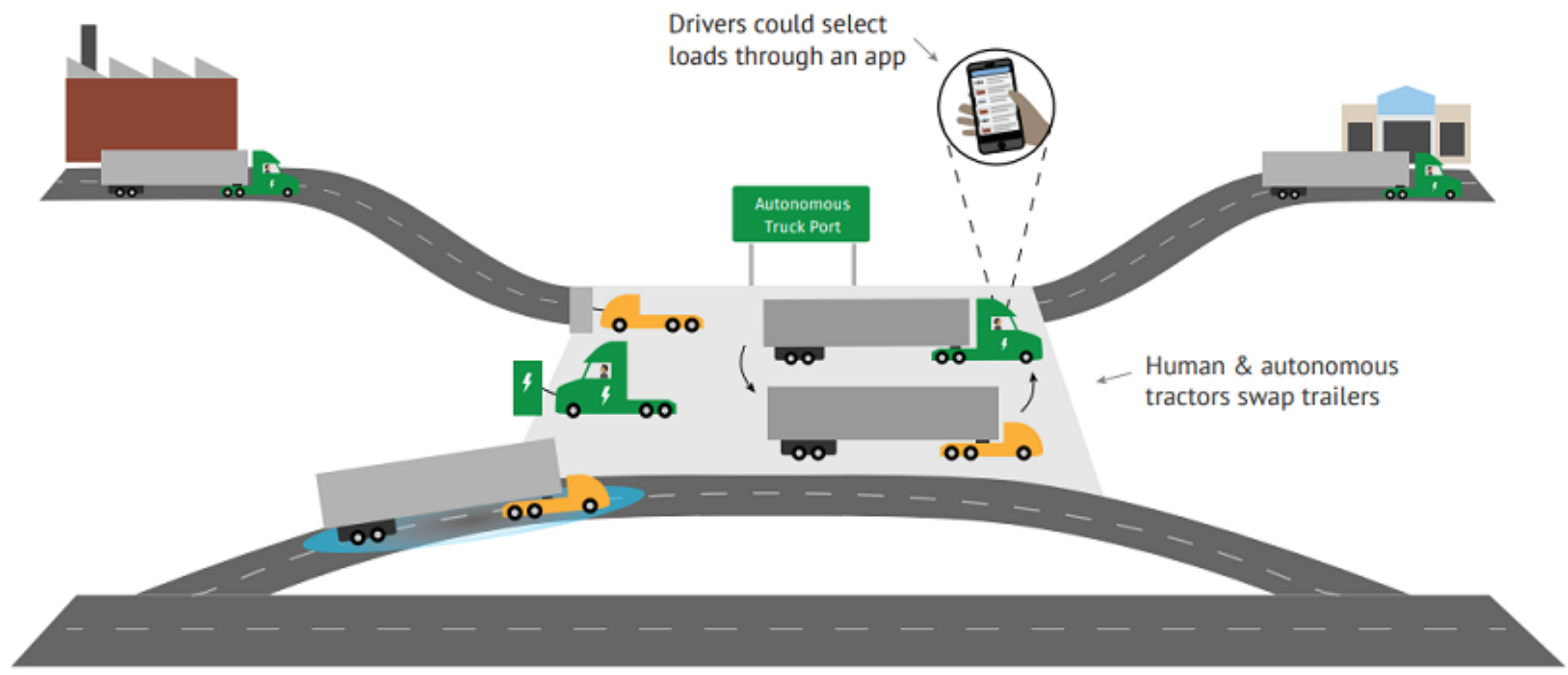
Local Hauls

Long Hauls



Drivers will transport goods from warehouses and factories to transfer hubs near the highway. Self-driving trucks, designed for highway driving, will pick up the shipment and drop it off at another hub where a driver will take it to its final destination.

What an autonomous truck port could look like



TECHNOLOGY

Could Self-Driving Trucks Be Good for Truckers?

That's what a new study from Uber's self-driving-truck team says, and a variety of trucking experts think they might be right.

ALEXIS C. MADRIGAL FEB 1, 2018

In the end, every expert I talked to for this story, from the teamsters to academia, believes that the broad strokes of Uber's analysis have some merit and represent a potential positive path for autonomous trucking to play in the labor market.

“I was prepared to read this proposal and say, ‘Ugh! You’re the worst!’” Levy says. “But as long as Uber makes pushes on the organizational and regulatory front as they’re making these technical pushes, there might be something here.”

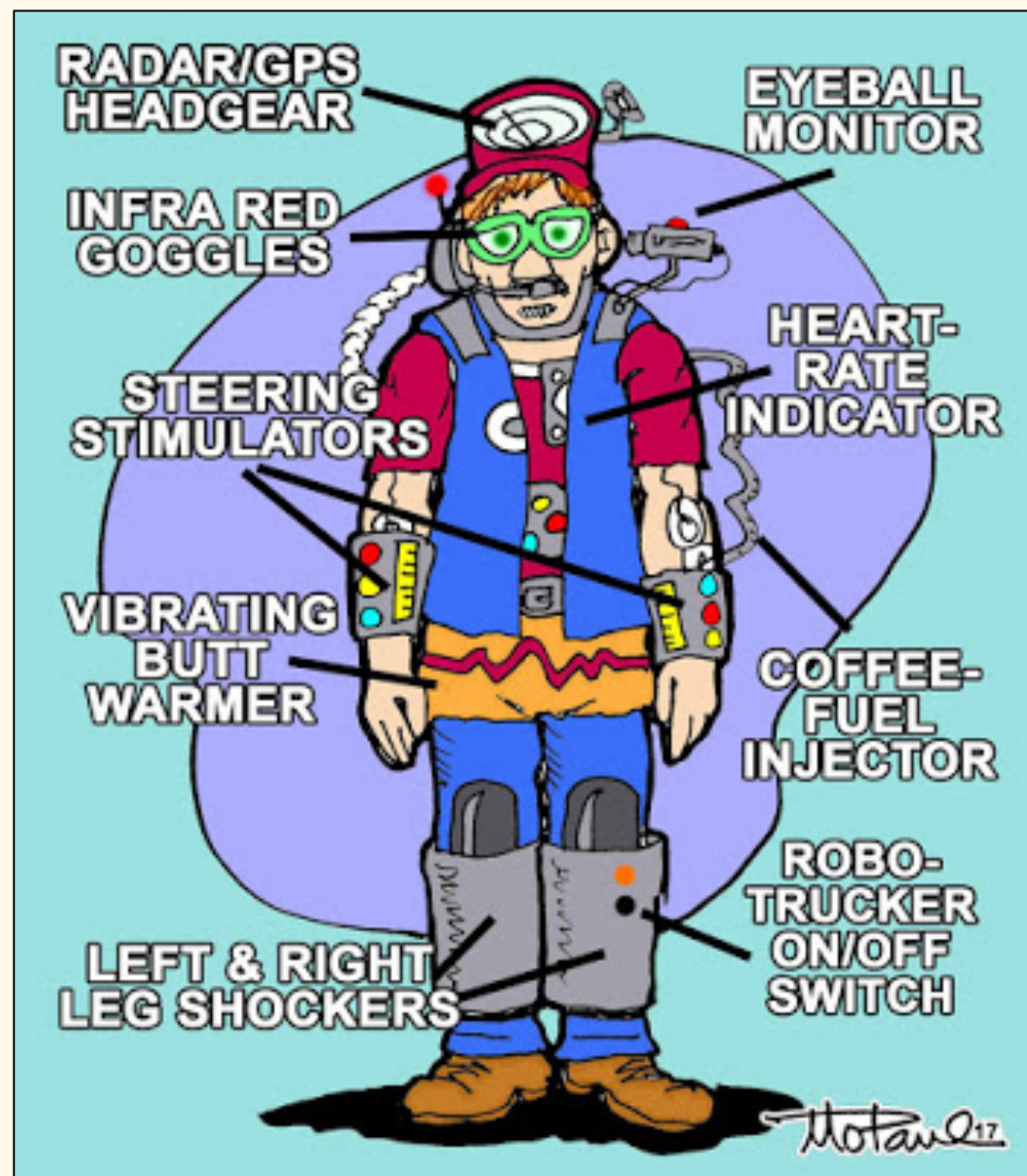
Uber's self-driving trucks division is dead, long live Uber self-driving cars

Kirsten Korosec @kirstenkorosec / 6 months ago

 Comment



(3) hybridization: the rise of the RoboTrucker



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Fit & healthy

“Predictive Emergency Defence”.

“Motion”, the third “Fit & Healthy” function in the vehicle, focuses on movement. In a video, renowned US medical expert David Agus explains seat functions which can be experienced in the concept vehicle, such as Active Seat and deep massage, and encourages drivers to do practical fitness exercises during breaks in driving.

The technology behind “Predictive Emergency Defence” (PED) from Mercedes-Benz demonstrates that Fit & Healthy features might also help prevent accidents in the future. The aim is to be able to detect imminent loss of consciousness by professional drivers in good time, in order to prevent resultant accidents. In an emergency, the predictive emergency assistance system is designed to automatically activate the hazard warning system and, as a last step, to bring the bus or truck to a controlled stop as well as to call for medical assistance. For this project, the researchers at Mercedes-Benz developed a so-called “sensor vest” with ECG sensors (electrocardiography).





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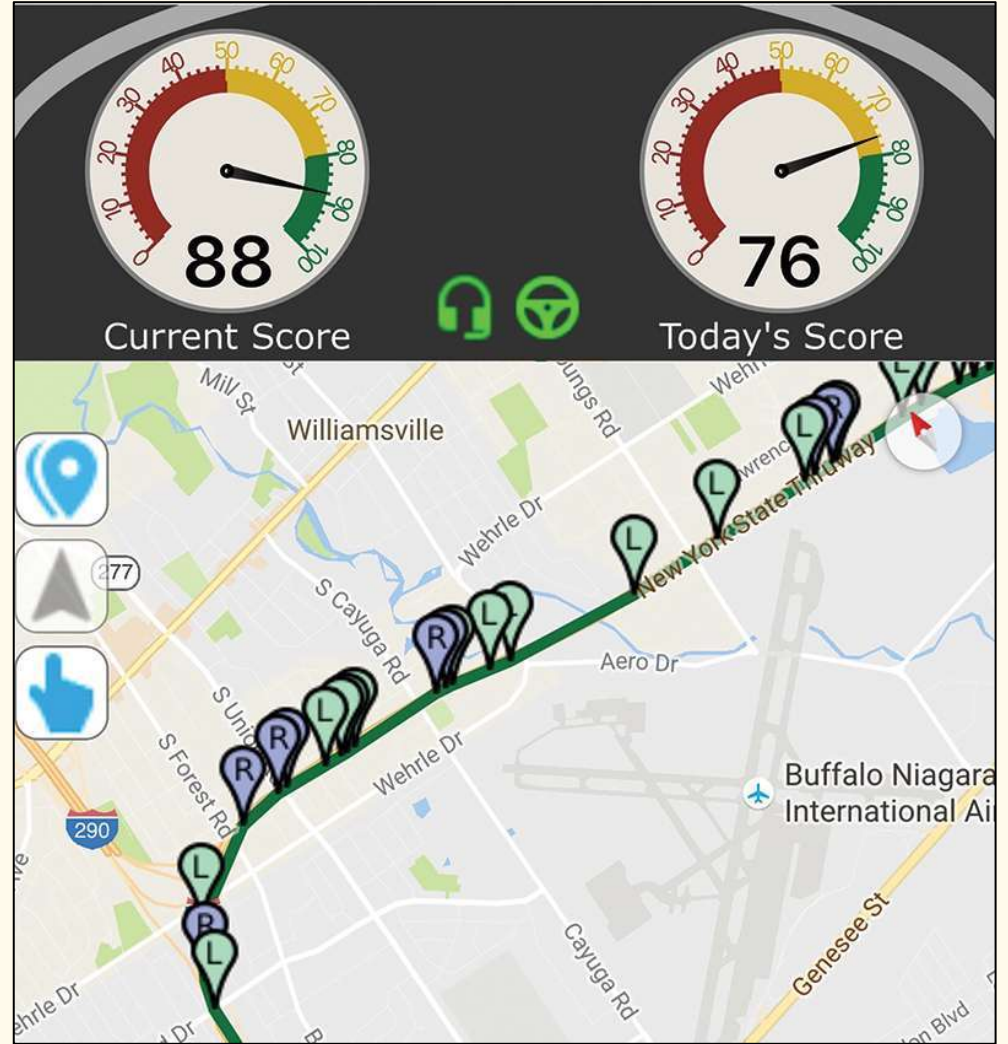
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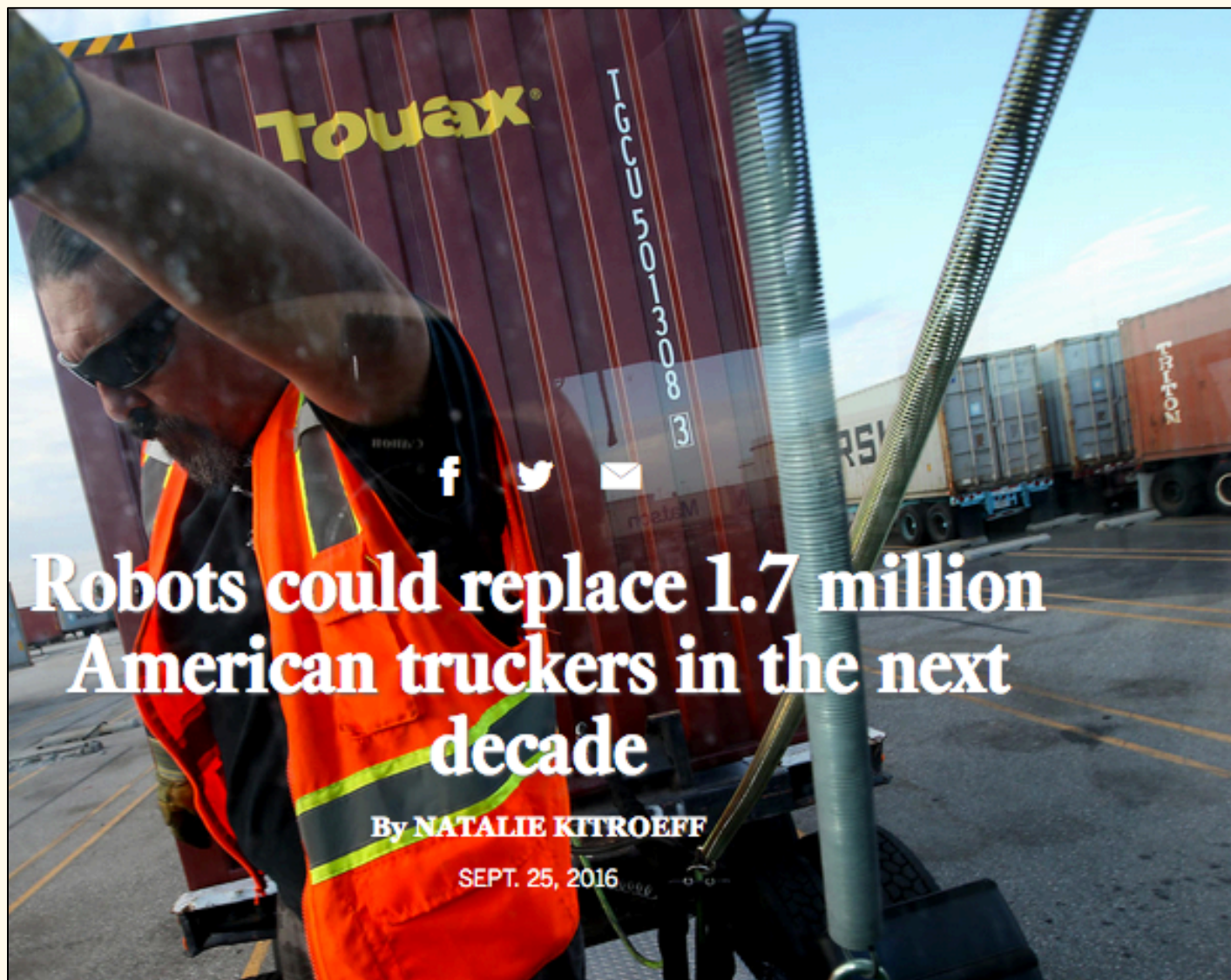
Smart-Mobile

Wearable

Cloud

Zero-Installation

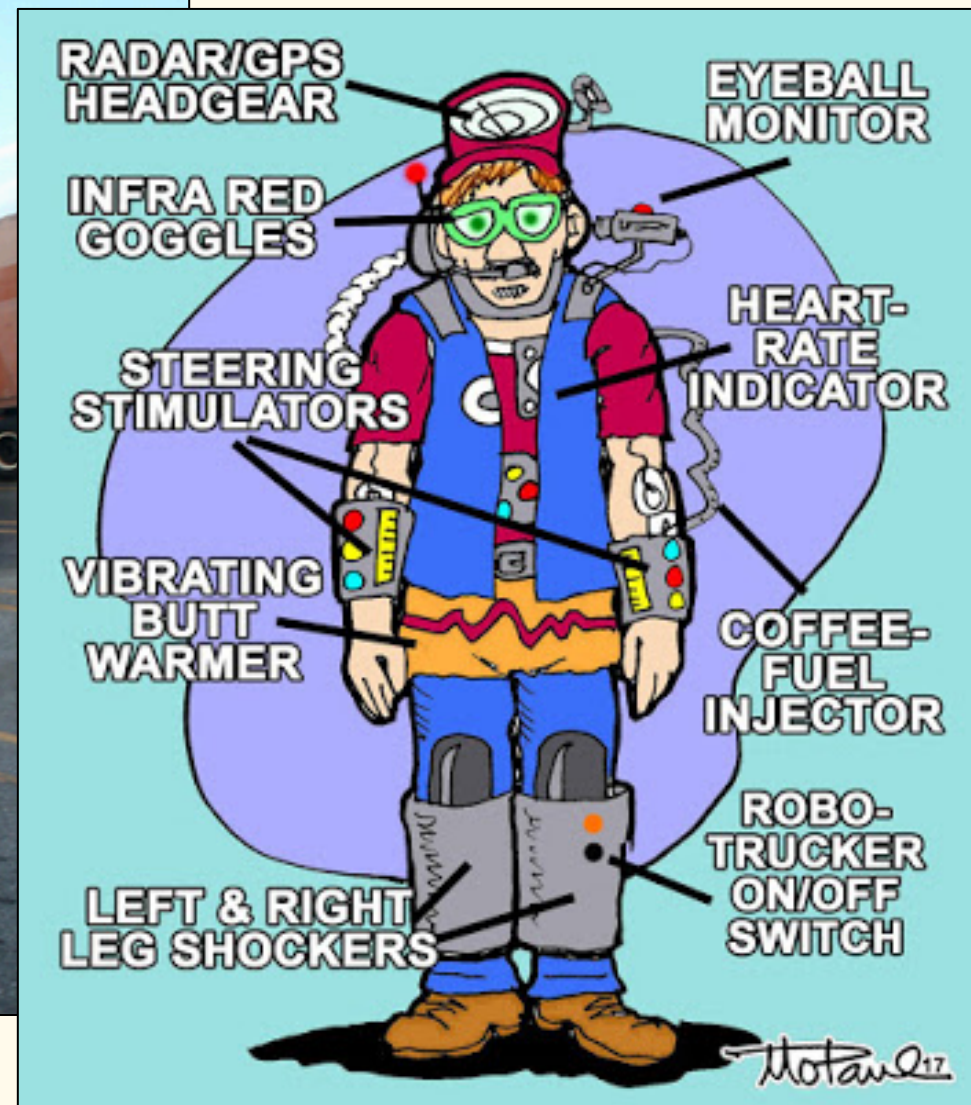




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By NATALIE KITROEFF

SEPT. 25, 2016



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