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Telematics Industry
Insights by
Michael L. Sena

THE DISPATCHER

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5TH ANNUAL PRINCETON SMARTDRIVINGCAR SUMMIT
2-4 JUNE 2022 – TRENTON, NEW JERSEY

*The focus of the **5th Annual Princeton SmartDrivingCar Summit** is deployment of Safe, Equitable, Affordable, Sustainable, High-quality Mobility seeded in a Trenton Operational Design Domain that is readily expandable, once successful, throughout Mercer County. It is repeatable in the entire State of New Jersey, delivering a service that can readily serve many of New Jersey's daily 30+ million non-walking person trips. See the program and register at: https://www.cartsmobility.com/summit*

*The Summit is organized by **PRINCETON UNIVERSITY**'s Alain Kornhauser with cooperation of the **CITY OF TRENTON**, the **N.J. DEPT. OF TRANSPORTATION**, and the **OFFICE OF GOVERNOR MURPHY**. Technical support is being provided by CARTS Mobility, a 501c3 non-profit corporation. **The Princeton SmartDrivingCars Summit** gathers leading global voices from the industry, academia, public sector, and local communities every year. The goal is to facilitate the scalable deployment of highly-assisted driving and driverless mobility of people and goods for safer streets, stronger communities, and more opportunities.*

*This year is special. Make History with the Inaugural **Trenton Mobility Festival**. Join us on Saturday, June 4th in Trenton for a day of community celebration of mobility, exhibition of the latest automated vehicle and ADAS technologies, music, food, and fun!*

THE DISPATCHER

Telematics Industry Insights by Michael L. Sena
May 2022 – Volume 09, Issue 06

Legal Framework for Driverless Cars Already Exists

Read This First

Mercedes-Benz will be introducing a function in their vehicles that will permit drivers to take their hands off the wheel. It will be available for the time being only in Germany, where road traffic laws have been modified to allow hands-off driving. The system and the effectiveness of the law were made possible by a detailed set of requirements prepared by the UN's World Forum for Harmonization of Vehicle Regulations, WP.29. The requirements are for Automatic Lane Keeping Systems. What the Mercedes-Benz system—and others that will follow from other OEMs—can do and where it can be used are restricted by what has been specified in the UN regulation. The vehicle must be on roads with a physical separation between opposing traffic and where pedestrians and cyclists are prohibited. The driver must be ready to take back the wheel when requested to do so by the system. This relationship between the requirements and the laws is what makes it possible to introduce this particular function. It is a first step. It represents the way things should be done.

1. *Want to Succeed in Life? Ask for Forgiveness, Not Permission*. INC. MAGAZINE. "So next time you're on the fence--wondering whether to take a small risk that could propel you forward in whatever endeavor you care about--just do it. Worry about the niceties later." https://www.inc.com/bill-murphy-jr/9-words-to-live-by-its-always-better-to-beg-forgiveness-than-ask-permission.html

We need compliance, not disruption

THERE'S AN ADAGE: "Ask for forgiveness, not for permission." This is attributed to various individuals giving advice on the best way to achieve an objective for which approval might not be readily given. Do the deed; it is much harder to undo it once it's done. This is the approach which TESLA has taken to new heights, where it not only did not ask for permission to sell its so-called Full Self-Driving feature, it doesn't beg for forgiveness for doing so. My own sense of moral justice is offended by this "end justifies the means" approach to life, but it seems to have become a mantra for how to succeed in business and life.[1] It's hard to argue with the verisimilitude of the statement when you compare TESLA's stock price to that of its competitors.

There are major implications resulting from the asking for permission. First, there is the acknowledgement of a higher authority, a person or an entity that is able to determine if an action is in the permission-seeker's as well as society's best interests. A society may be a family, a community, a state or even a business. Second, there is the tacit agreement to abide by the decision, to be either allowed or denied the privilege. And third, there is acceptance of responsibility for the results of taking the action once permission is given.

TESLA has not requested permission to install *Autopilot* and *Full Self-Driving* (*FSD*) in its vehicles, and it sells FSD to customers for around $12,000. These software/hardware features, when activated, perform the functions of automatic lane keeping systems (ALKS) on any road at any time. TESLA has not accepted the purview of any existing legal limits on vehicles being required to have a human driver in charge of the vehicle at all times. It claims that its guidance to its customers that they must keep their hands on the steering wheel at all times relieves TESLA of the responsibility for what happens when they do not, because, after all, why would they pay $12,000 for a fully self-driving feature if they had to drive the car themselves?

OEMs start asking for ALKS permission

It is both their own or their customers' interests being covered

The tinder for this month's lead article was the MERCEDES-BENZ announcement in December 2021 that it had received "the world's first internationally valid system approval for conditionally automated driving." This press release is clearly written as a dig at TESLA, the company that does not play by the rules or even accept that there are rules. Here is what MERCEDES-BENZ says in its official press release (underlines are by Editor):

Stuttgart. MERCEDES-BENZ is the first automotive company in the world to meet the demanding legal requirements of UN-R157 for a Level 3 system[2]. The GERMAN FEDERAL MOTOR TRANSPORT AUTHORITY (KRAFTFAHRT-BUNDESAMT, KBA) has granted system approval for this on the basis of the technical approval regulation UN-R157, thus paving the way for offering such a system internationally[3], provided that national legislation allows it. Germany has taken a pioneering role in this with the opening of the Road Traffic Act (StVG) for Level 3 systems since 2017. This is why the first customers will be able to buy an S-Class with DRIVE PILOT in the first half of 2022, enabling them to drive in conditionally automated mode at speeds up to 60 km/h in heavy traffic or congested situation on suitable stretches of motorway in Germany (13,191 kilometers of motorway). The special DRIVE PILOT equipment takes the strain off the driver and allows him or her to perform ancillary tasks[4] on the central display such as online shopping or processing e-mails in the in-car office. The system approval also applies to the EQS.

We need to parse this statement to identify exactly what is and is not stated. First, M-B says it is "first" to meet the requirements of UN-R157. I wrote about UN-R157 in the April 2021 issue of The Dispatcher which you can use as reference for details on the regulation.[5] If it's first, then anyone claiming they have a system that meets the requirements of UN-R157 is fibbing. Second, Germany's *MOTOR TRANSPORT AUTHORITY* has "granted approval" for the system. This means Type Approval, and it has been tested by the technical service designee, TÜV RHEINLAND. Third, it can only be offered where "national legislation allows" Level 3 systems, and at this time it is Germany that was first (pioneering) with enabling legislation. Note that it makes a point to state that the system cannot be used if the car is travelling over 60 km/hr.

What the press release does not mention at all, including all the explanatory information provided in it, is who is liable if

2. The Society for Automotive Engineers (SAE) J3016 Technical Standards Committee produced a chart in 2016, *Levels of Driving Automation*. It defines six levels of driving automation, from SAE Level Zero (no automation) to SAE Level 5 (full vehicle "autonomy", meaning driverless anywhere at any time).

3. When stating that this paves the way for offering the system internationally, it means within the countries that are parties to the international United Nations inland transport conventions and agreements. They include EU countries, the UK, Japan, Korea and Australia. The United States and China are not among these countries.

4. Which secondary activities of the driver are legally permissible depends on the respective national road traffic regulations.

5. On the 22nd of January 2021, the *Uniform provisions concerning the approval of vehicles with regard to Automated Lane Keeping Systems (ALKS)* came into force as an annex to the 1958 Geneva Agreement.

http://www.michaellsena.com/wp-content/uploads/2021/03/The-Dispatcher_April-2021.pdf

the car crashes during the time it is being driven by the ALKS, and during those ten seconds after the driver has been told to take back controls because the system can no longer function. It was a claim made by a *ROAD AND TRACK* magazine journalist, included in Professor Alain Kornhauser's weekly *SMARTDRIVINGCARS E-LETTER*, which served as the spark that set the tinder burning. The journalist, Mark Hogan, wrote the following in the March 20 issue of the magazine: *"Mercedes' new Drive Pilot seems, in operation, like many "traffic jam assistant" technologies already on sale today.*[6] *On certain highways, below 40 mph, a Drive Pilot-equipped S-Class or EQS will take control of the car's speed, steering, and brakes to move you along in traffic. But there's one key difference: Once you engage Drive Pilot, you are no longer legally liable for the car's operation until it disengages. You can look away, watch a movie, or zone out. If the car crashes while Drive Pilot is operating, that's Mercedes' problem, not yours...."*

6. It is not clear what Hogan means by this. There are only two hands-off systems on the European and U.S. markets, Tesla and Cadillac, and only Cadillac actively monitors the driver and turns itself off if the driver is not hands-on.

I looked for a source that came directly from MERCEDES-BENZ stating categorically that it was accepting full legal liability when DRIVE PILOT is engaged. The *ROAD AND TRACK* article did not provide a source for its claim. I found quite a few articles that referred to Hogan's *ROAD AND TRACK* as the basis of their statements about M-B accepting liability, but nothing from M-B itself. I combed through the 54-page M-B document, *Introducing DRIVE PILOT: An Automated Driving System for the Highway*, but found not a single use of the word 'liability', nor any statement about M-B taking full responsibility while the system was activated.[7] I sent a request to the two individuals listed on the press release requesting clarification. I received the mail within twenty-four hours from Alexandros Mitropoulos, Spokesperson Autonomous Driving, *Technology Communications* MERCEDES-BENZ AG:

7. https://group.mercedes-benz.com/documents/innovation/other/2019-02-20-vssa-mercedes-benz-drive-pilot-a.pdf

"In regards to the liability topic in the event of an accident, allow me to point out:

- *The system must safely perform the dynamic driving task when activated.*
- *However, the driver still has duties in public road traffic even during conditionally automated driving. It is true that they are allowed to temporarily turn away from traffic in Germany; however, they must, for example, resume the driving task at any time when requested to do so by the system.*
- *Liability in the event of an accident is determined by the circumstances of each individual case. If, for example, the driver fails to comply with their duty of care and causes an accident*

as a result, they are liable alongside the owner for the resulting damage.

- *In addition, MB as the manufacturer may be liable under product and producer liability for damage caused by a product defect. This applies equally to automated and conventional vehicles.*
- *For the area of automated driving, we as manufacturers still consider the existing, traditional liability regime for road accidents with the combination of owner, driver and manufacturer liability to be unrestrictedly suitable.*
- *This applies to Germany, where MB already received approval from the authorities and a regulatory framework is in place."*

To summarize, MERCEDES-BENZ assumes full product liability for the safe performance of its ALKS in Germany. It can only be activated on selected roads in Germany, the *Autobahn*, and the liability laws of Germany apply. (I will address this below.) If the ALKS fails when it is activated, M-B's product liability insurance applies. M-B is NOT taking out personal liability insurance or any other insurance product to cover personal injury or property damage. It is using the "existing, traditional liability regime" for accidents if they occur while ALKS is active.

MERCEDES-BENZ's statement seems to be totally unequivocal, clear and unambiguous.

When in doubt, go to the law

To close the legal loop, I went to the German enabling legislation to see if there is a clause that specifically and unconditionally states the automobile manufacturer bears legal responsibility for an eventual crash when the vehicle is in self-driving mode, and what the extent of those responsibilities are. I found it.[8] It is on a DEUTSCHER BUNDESTAG (GERMAN PARLIAMENT) site dated from 2017 with the title *Road Traffic Act amended for automated driving*. It opens with the following statement:

"On Thursday, March 30, 2017, the CDU/CSU *and* SPD *parliamentary groups (i.e., political parties) approved a federal government draft to amend the Road Traffic Act (18/11300) in the version (18/11776) amended by the Transport Committee.[9] The* Bündnis 90/Die Grünen *and* Die Linke *parliamentary groups (i.e., political parties) rejected the proposal. An amendment by the* Left Group *(18/11786) did not find a majority. The draft law clarifies that the operation of motor vehicles using highly and fully automated driving functions is permitted "within the scope of the intended use".*

8. https://www.bundestag.de/dokumente/textarchiv/2017/kw13-de-automatisiertes-fahren-499928

9. Angela Merkel was the Chancellor of Germany in 2017 as the leader of the Christian Democratic Union (CDU).

There is a report on the same site which describes the debate that took place prior to passage, and there are explanations of various aspects of the law. It was made clear that the automated driving function should only be used to control the vehicle if the vehicle driver observes specially regulated obligations to immediately resume vehicle control. The driver may turn away from the traffic situation and the vehicle guidance in the event that the highly and fully automated driving function has taken control of the car, however, the driver must be "perceptive enough to be able to take control again when the system prompts the driver to do so". During the discussion it was stated that liability issues are also regulated in the law.

"The aim of the law is to show that automated driving is possible," Federal Transport Minister Alexander Dobrindt (CSU) is quoted as saying at the beginning of the debate. "There are now legal requirements for this for the first time in the world. We are creating legal equality between the human driver and the computer as a driver," said Dobrindt. In addition, the liability issues would be clarified: "If the automated mode controls the vehicle, the liability lies with the manufacturer," the minister made clear.

So assigning liability to the manufacturers is part of the law. There is a link to the law on the web site which I read and translated the parts referring to liability.[10] Here is what I found:

- The new law will allow a person or entity to register and use vehicles that steer and accelerate by technical means (i.e., not by the driver) "for a specified period of time and specified situations", and which are capable of "instructing the driver" to take over control again. Accordingly, drivers will be able to fully transfer their control to automated systems for any given time, until the system demands the driver to resume control.[11]
- Drivers will be allowed to turn away from traffic events and from the direct control while the vehicle is in the 'auto-pilot' mode. However, the driver must be able to take the steer(ing wheel) at any time, if and when the automated system alerts and demands this to happen. Accordingly, drivers will not be able to rely "blindfold(ed)" on the driving system, but must remain ready to intervene. (Ed: In other words, the driver may read, write or watch TV to a certain extent, but having a nap will remain prohibited.) The new law will shift the existing liability in case of an accident: Until now, the driver's inattention at any given point in time triggers his liability; in the future, during the auto-pilot mode, the driver's possible liability will focus on failing to react to the "wake-up signal".

10. https://dserver.bundestag.de/btd/18/113/1811300.pdf

11. That is a significant step beyond the previous law, which required the driver to monitor traffic events at all times when using partially automated driving systems.

- Vehicles with automated driving systems will be equipped with Data Storage System for Automated Driving (DSSAD) in order to allow root cause analysis of car accidents.[12] Similar to aircraft, the black box will record journey data in order to evaluate whether the driver has reacted late or whether the system has failed. Whenever evidence is had that the manufacturer of the system is responsible for the accident, he (the manufacturer) will be liable without limitation.

It is important to note that there was a further act, the Autonomous Driving Act, passed by the German Parliament that went into effect on the 28th of July 2021. ***This Act is not part of the enabling legislation for ALKS and the Mercedes-Benz DRIVE PILOT.*** *This act allows motor vehicles with autonomous driving capabilities, meaning "vehicles that can perform driving tasks independently without a person driving", to operate in specified operating areas on public roads. It contains provisions for "autonomous driving in appropriate operating areas corresponding to Level 4 of the Society of Automotive Engineers (SAE) driving automation levels". A technical supervisor who can deactivate or enable driving maneuvers of the autonomous vehicle from the outside remains necessary. Registered keepers of motor vehicles with the autonomous driving function must obtain additional liability insurance for the technical supervisor. The Autonomous Driving Act is one of several measures to create a legal framework to implement the German federal government's 2015 Strategy for Automated and Connected Driving. Since 2015, the Federal Ministry of Transport and Digital Infrastructure has authorized testing of automated and connected vehicles under real-life conditions. In June 2017, Germany amended its Road Traffic Act to allow drivers to transfer control of their vehicles to highly or fully automated driving systems and for those vehicles to be used on public roads.*

https://www.loc.gov/item/global-legal-monitor/2021-08-09/germany-road-traffic-act-amendment-allows-driverless-vehicles-on-public-roads/

What the insurers say about liability for driverless cars

In its *Communication, Com (218) 283*[13], the *EUROPEAN COMMISSION* addressed liability issues for the deployment of intelligent transport systems. It states:

"Liability for motor vehicles within the EU is addressed through various instruments, such as Motor Insurance Directive (Directive 2009/103/EC) or Product Liability Directive, as well as the different liability regimes in the Member States (e.g., traffic law, civil law, specific strict liability regimes and national implementation of the EU Product Liability Directive)."

12. Data Storage System for Automated Driving (DSSAD) enables the determination of interactions between the ALKS and the human driver. Each vehicle equipped with a DSSAD shall at least record an entry for each of the following occurrences upon activation of the system:

(a) Activation of the system

(b) Deactivation of the system, due to:

(i) Use of dedicated means for the driver to deactivate the system;

(ii) Override on steering control;

(iii) Override by accelerator control while holding steering control;

(iv) Override by braking control while holding steering control.

(c) Transition Demand by the system, due to:

(i) Planned event;

(ii) Unplanned event;

(iii) Driver unavailability (as per para. 6.1.3);

(iv) Driver not present or unbuckled (as per para. 6.1.2.);

(v) System failure;

(vi) System override by braking input;

(vii) System override by accelerator input.

(d) Reduction or suppression of driver input;

(e) Start of Emergency Manoeuvre;

(f) End of Emergency Manoeuvre;

(g) Event Data Recorder (EDR) trigger input;

(h) Involved in a detected collision;

(i) Minimum Risk Manoeuvre engagement by the system;

(j) Severe ALKS failure;

(k) Severe vehicle failure.

UN R157

13. Communication From the Commission to the European Parliament, the Council, the European Economic and Social Committee, the Committee of the Regions – On the road to automated mobility: An EU strategy for mobility of the future. (17.5.2018 Com(218) 283 final.

This *Communication* states that the "actual cause of events that lead to damage or incident is decisive for the attribution of liability". It is for this reason the Commission proposed that the vehicles are fitted with data recorders to clarify who was driving during an accident, the vehicle's "autonomous system" or the driver. WP.29 accepted this recommendation and made the data recorder a mandatory part of UN R157.

Concerning compensation of victims, it states that "the *Motor Insurance Directive* already provides for a quick compensation of victims, including where an automated vehicle is involved". The driver/owner of the vehicle must carry liability insurance, and in case of an accident it is the owner's/driver's insurer which covers damages. Once it is determined if the human or the software was driving with the help of the DSSAD, and if fault is assigned to the vehicle, the insurer can then take legal action against a vehicle manufacturer under the *Product Liability Directive*.[14] "Interpretative guidance clarifying important concepts in the *Directive* including in the light of technical developments will be provided," states the Communication. And here is the important statement: "The *Motor Insurance Directive* has recently undergone an evaluation, which concluded that no changes are necessary as regards autonomous vehicles: They will be required to have third party liability insurance in line with the Directive."

The *Product Liability Directive* expressly leaves several matters to the national law of member states, including the following:

- Implementation of the development risk defense.
- Introduction of a ceiling for damages resulting in death or personal injury by identical products.
- Recovery of non-material damages.

What is the situation in the United States? Two features of the legal system in the United States make it difficult to set forth the law of automotive products liability with absolute certainty. First, most of the rules of private law are made by the individual states, not by the federal government. There is no general, federal compulsion to uniformity. Second, the common-law courts in the United States are empowered to make—and to change, rules of law. As a result, the United States is composed of fifty jurisdictions whose law is sometimes similar and sometimes very different. In any jurisdiction, an attorney's opinion about a rule of law can only be a prediction of what a court will do because of the authority that the court may consider controlling or persuasive.[15]

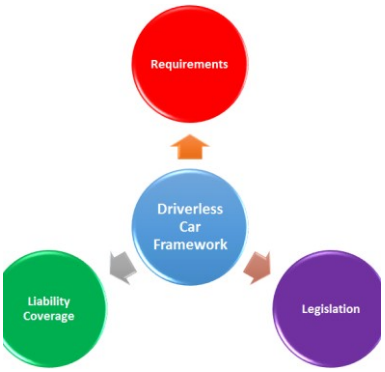
14. The main legislative instrument relating to product liability at an EU level is Directive 85/374/EEC on liability for defective products (Product Liability Directive). The Product Liability Directive was adopted in 1985 and sets out the EU-wide no-fault liability regime for defective products. As a directive, it has been implemented by EU member states and their national courts enforce the directive in line with the relevant domestic laws that implement it.

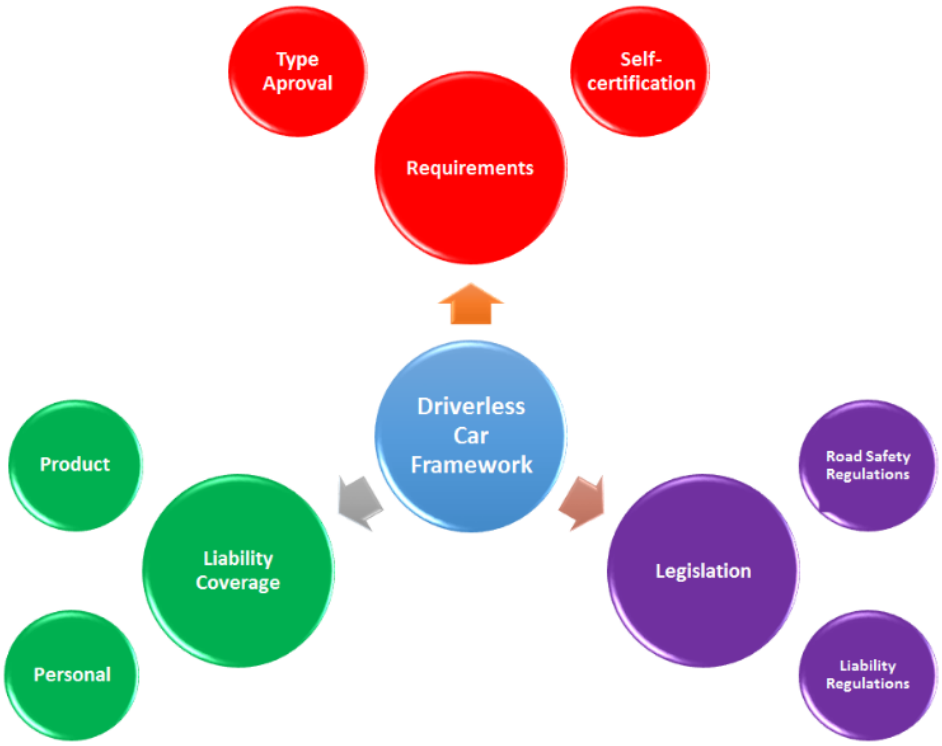
15. https://www.mcguirewoods.com/news-resources/publications/us-automotive-products-liability.pdf

Driverless Car Liability Starts with Clear Laws

There are too many amateur cooks in the kitchen trying to come up with a new recipe for the vehicle policy stew. The recipe we have is fine. It has evolved over the past 65 years since the first international convention on road transport was developed and began to be incorporated into country laws. The UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE (UNECE) has been responsible for inland transport since it was established in 1947. Its *WORLD FORUM FOR HARMONIZATION OF VEHICLE REGULATIONS, WP.29*, has provided regulations with requirements that have been incorporated in the Type Approval requirements in many countries. In the U.S., the *Federal Motor Vehicle Safety Standards* (*FMVSS*), which are issued by the DEPARTMENT OF TRANSPORTATION's *NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION*, are the counterpart to the WP.29 UN Regulations. Automotive manufacturers design to these requirement as well as to other, complementary standards from, for example, ISO (*INTERNATIONAL ORGANIZATION FOR STANDARDIZATION*).

We have the framework for preparing the **requirements**, passing the **legislation**, and distributing **liability** when necessary. We don't need new authorities, special laws, or exceptions to those laws that apply to all motorists and pedestrians. If anything, we need more diligence in enforcing the laws we have and educating all road users in those laws and the importance of following them, whether they are in a car, on a bike or scooter, or walking across a road. What distinguishes the process followed by MERCEDES-BENZ with ALKS from the one that has been followed by TESLA with its Autopilot and Full Self-Driving functions is that M-B applied the framework and TESLA did not. M-B based its design on the requirements established in UN R157 that are incorporated into the Type Approval specifications so that there is a traceable path to follow if there is a malfunction and liability has to be assigned to either the manufacturer or the driver. Also, M-B is following the lead of the country laws, not pushing ahead of them. There are no laws that allow hands-off driving for series production cars in the U.S. where TESLA sells its FSD, and this is why TESLA makes it a point to tell its customers that they must keep their hands on the wheel, which, of course, they don't. Germany is first to allow controlled hands-off driving in Europe. It is likely that other countries in Europe will follow, or may already be in the process of announcing modifications to their road traffic laws to allow hands-off-driving. It is likely that the U.S. will adopt the UN R157 specifications and include them in its FMVSS regulations, and that its states will modify their laws in the way that Germany has.





Today it's ALKS. Tomorrow there is a whole slew of regulations that WP.29's *Working Party on Automated/Autonomous and Connected Vehicles* (*GRVA*) is working on.[16] Higher maximum speed limits for ALKS is one of them. Others are functional requirements for automated vehicles, validation methods for automated driving, further issues with cybersecurity and over-the-air issues, defined in UN R155 and 156. WP.29 states in its Framework document on automated/autonomous vehicles[17] that it "*recognizes that for automated/autonomous vehicles to fulfil their potential, in particular to improve road transport, then they must be placed on the market in a way that reassures road users of their safety. If automated/autonomous vehicles confuse users, disrupt road traffic, or otherwise perform poorly, they will fail. WP.29 seeks to avoid this outcome by creating the framework to helping deliver safe and secure road vehicles in a consistent manner.*"

I believe it's time to get over the dot.com mentality of ignoring conventions, breaking things that are working just fine, and acting like history starts every morning when we wake up. We have all the tools we need to improve the safety and performance of our motorized vehicles. Let's find a way to get everyone to use them.

16. https://unece.org/transport/vehicle-regulations/working-party-automatedautonomous-and-connected-vehicles-introduction

17. https://unece.org/sites/default/files/2022-02/FDAV_Brochure%20-%20Update%20Clean%20Version.pdf

About UNECE's World Forum for Harmonization of Vehicle Regulations

The World Forum for Harmonization of Vehicle Regulations (WP.29), hosted by UNECE, is the inter-governmental platform that defines the technical requirements applied by the automotive sector worldwide.

About the UN Regulation on Automated Lane Keeping Systems

The regulation text is available at: https://undocs.org/ECE/TRANS/WP.29/2020/81

ALKS activation criteria:

- The driver is in the driver seat with safety belt fastened;
- The driver is available to take over control of the driving task;
- No failure affecting the safe operation or some functionalities of the system is detected;
- DSSAD is operational;
- Positive confirmation of system self-check; and
- The vehicle is on roads where pedestrians and cyclists are prohibited and which, by design, are equipped with a physical separation that divides the traffic moving in opposite directions;
- The environmental and infrastructural conditions allow the operation;

Driver Availability Recognition System:

- Driver presence;
- Driver availability;
- Actions taken when driver is deemed unavailable.
- Criteria for deeming driver availability:
    - The driver deemed to be unavailable unless at least two availability criteria (e.g. input to driver-exclusive vehicle control, eye blinking, eye closure, conscious head or body movement) have individually determined that the driver is available over the last 30 seconds;
- Actions taken when driver is deemed unavailable.

Data Storage System for Automated Driving (DSSAD)

The system will record the following events:

- Activation of the system;
- Deactivation of the system (e.g. override on the steering wheel);
- Transition Demand by the system (e.g. planned, unplanned etc.);
- Reduction or suppression of driver input;
- Emergency Manoeuvre;
- Involved in a detected collision;
- Minimum Risk Manoeuvre engagement by the system;
- Failures.

DSSAD data shall be available subject to requirements of national law.

United Nations Economic Commission for Europe

Information Unit

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Dispatch Central

West Virginia mulled ban on OTA updates

WEST VIRGINIA'S PLAN to ban over-the-air vehicle software updates hit the press around the end of February this year, just before it was introduced to the State House of Representatives. West Virginia, the capital of Greater Appalachia (see *Musings* in this issue), is making a name for itself as a place that takes care of its own, whether they are coal miners or car dealers. No one in D.C., Detroit, Silicon Valley or Boston is going to make policy or pass laws that affect their workers or businesses without a fight. In this case, the WEST VIRGINIA AUTOMOBILE DEALER'S ASSOCIATION (AVADA) members asked their legislators to clarify what the automobile manufacturers who supply them with their new cars to sell should and should not do. One of the "should nots" they asked for was fixing their cars with over-the-air (OTA) software updating.[18]

HB4560 covers every aspect of the dealer/OEM relationship. This is what the original draft that went to the House Judiciary Committee said about OTA software updates:

"Except for experimental low-volume not-for-retail sale vehicles, [OEMs cannot] cause warranty and recall repair work to be performed by any entity other than a new motor vehicle dealer, including post-sale software and hardware upgrades or changes to vehicle function and features, and accessories for new motor vehicles sold by a licensed new motor vehicle dealer. Provided however, this language shall not include any post-sale software upgrades to the motor vehicle's navigation or entertainment system."

So map updates and infotainment upgrades would be okay, but not fixing faults that might result in a recall, or tuning a function so that it performs better. Once the word got out, protests started arriving.[19] The ALLIANCE OF AUTOMOTIVE INNOVATORS (AAI) wrote that "restricting software updates would needlessly harm consumers and potentially create safety risks." The legislators listened. In the committee substitute bill version approved by the House Judiciary Committee on the 24th of February, the

18. https://openstates.org/wv/bills/2022/HB4560/

19. https://www.repairerdrivennews.com/2022/03/01/west-virginia-legislative-committee-strikes-ota-recall-repair-ban-from-bill/

paragraph was shortened and references to OTA were removed: *"A manufacturer of distributor may not cause warranty and recall repair work to be performed by any entity other than a new motor vehicle dealer."*

The modified Bill passed the House on the 1st of March, it passed the Senate on the 10th of March, and it was approved by the Governor on the 30th of March. If the original Bill had passed, the one company that would have been most affected by this law is TESLA, since it is the one company most active with OTA. But TESLAs are not sold in West Virginia. There are no TESLA stores or mall locations in the state. But, sooner or later, most companies will be delivering software updates, and making it illegal in any of the 50 states in the Union would put the residents of that state at a disadvantage. Logic prevailed. Wouldn't it be great if logic and rationality were the default approaches to politics in the U.S. They were at one time; maybe there is hope that they will be again.

UNITI, a BEV company full of promises, sinks

SWEDISH BEV WONDER, UNITI, has reached the end of the line. It was a company full of promise with a founder full of promises. The promise went unfulfilled, and the promises went unkept. UNITI SWEDEN was started as an innovation project at LUND UNIVERSITY by an Australian, Lewis Horne, who was studying at the UNIVERSITY. He had a bachelor's degree in international economics and marketing from a university in Australia, and had completed a master's program at LUND in entrepreneurship. The project evolved into a battery electric car company that was founded in January 2016 with Horne as the CEO. On the 11th of March, 2022, the company filed for bankruptcy and its web site, *uniti.earth*, shut down. Horne was on a sailboat in the Caribbean when it happened.

Much of the material for this article comes from an article in a Swedish magazine written by a young journalist named Nikolai Atefie, an Austrian who had also come to Sweden to study at LUND.[20] He met Horne by chance. They struck up a conversation, and the next thing Atefie knew, he had sunk 10,000 Swedish Crowns (around €1,000) into Horne's new company through its crowdfunding site. He, and 3,500 others who fell for Horne's spiel and plunked down €6.5 million, lost it all. Horne's favorite musical accompaniment to his on-stage performances when he pitched UNITI was *Pirates of the Caribbean*. The irony of Horne's escape destination was not lost on Atefie.

20. Atefie, Nikolai. *Harebrained*. *FILTER* (February/March 2022).

Here's the background

Horne made two promises when he founded UNITI. One was that the car would be designed in Sweden, and the second was that the car would be built in Sweden. He said the car would combine luxury with the minimum level of impact on the environment. Its small physical footprint and its all-electric drivetrain would ensure its environmental credentials. The car would have a range of 300 kilometers (180 miles), and it would come with a little portable battery with 30 kms of range just in case of an emergency. Early on, he showed a prototype. (See top image in sidebar.) It was never more than a shell, and it was never produced. The car that could finally move under its own steam was designed and produced in China. It was a re-badged *Zidou D3*, shown right.

This was the prototype Uniti showed shortly after it was established. It continued to be the image of the company's car until December 2020, when it was replaced by a Zidou D3, re-badged as the Uniti Zero.

The D3 is manufactured by ZHI DOU ELECTRIC VEHICLE CORPORATION (web), also known as ZD Auto. The ZHEJIANG GEELY HOLDING GROUP, the conglomerate that also owns Geely Auto and Volvo, is the majority shareholder of ZD Auto.

Lewis Horne had managed to convince an ex-MCKINSEY & COMPANY consultant, Michael Molitor, to head his board of directors. Molitor said in the 2017 crowdfunding video that the reason he had taken the position in a small start-up was that "this was his life's chance to make a difference". Other big names got behind the new company, impressed by the energy of the founder and his ability to convey a compelling vision of the future of transportation. SIEMENS, E.ON, and the German industrial robot giant KUKA, were among them. Sweden's Green Party co-leader and vice-prime minister at the time gushed, "This is huge!". Five years later, SIEMENS claimed UNITI was simply a customer and had lined up among the debtors for a piece of what was left. Everyone else had already headed for the exit doors.

The story unfolded and the vision unraveled

At the first major "investors meeting", in December 2017, which was held in what was to be the company's future manufacturing facility, the head of KUKA NORDEN said to the 2,000 who had gathered in mostly empty space: "Not even twelve months after UTITI was founded there is a top modern head office, a completely equipped prototype workshop, a production facility and a prototype. To have managed all of this in such a short time is tryly impressive, and it shows what UNITI can achieve in the near future." The head of E.ON's Swedish operations added: "This is not only a car, it is so much more than a car, and we want take this technology and its innovations to the consumers. We will definitely not have cars from VOLVO, BMW and MERCEDES in our shops, we have chosen this company because it is special."

Horne leveraged all of this praise into a place on the genius circuit. He made the rounds to all the tech conferences. He flew to India,

he travelled his old home country of Australia, he went to Britain, and he showed up in Georgia (the one in the Caucasas, not in the U.S.), and wherever he went, he made promises. *Uniti One* would be rolling out at the end of whatever year it happened to be, 2017, 2018, 2019. It would be produced in whatever country he happened to be in. It would be less expensive and more technically advanced than anything on the market. Crowdfunding became part of the routine. Money rolled in, but it also seemed to roll out.

In September 2019, the company had a negative net worth of €1 million and almost that much in debts. It posted a loss for the year of €2.5 million. One of the companies waiting for its money was SIEMENS. Another debtor was VINNOVA, Sweden's innovation funder. UNITI had received money for an innovation project but never delivered anything. It had also not produced anything. The same prototype stood in the corner of the prototype workshop, but most of the employees had already departed.

A year later, in December 2020, *Uniti Zero* was presented to the public. It was the *Zhidou D3*. This was when the stories began to circulate that a new Chinese owner was about to invest in the company. There would be an IPO in the 4th quarter of 2021. All the debts would be paid, all the crowdfunding investors would make the money they had counted on making, and Lewis Horne would be a hero. But none of that happened.

A former employee, who spoke to Atefie, said: "He thinks he's Elon Musk. But he knows nothing about cars. He is a pure scam. I can't remember a single promise he kept." In Horne's last conversation with the Atefie, when Horne was preparing to make the Atlantic crossing, he told Atefie that he actually believed everything he said about UNITI, and he felt that everyone listening to him wanted to believe it was all true. Perhaps if those investors had kept their money and put it into their own sailboat fund, they could have been off to the Caribbean and Horne would have been working off his debts in an honest job. If ifs and ands were pots and pans, all the world would be shiny. But they aren't and it isn't. *Caveat emptor*. There are lots of snake oil salesmen out there waiting to take your money.

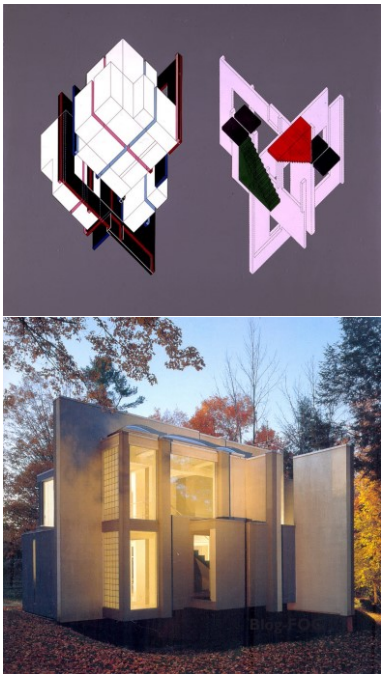
Transport's Best Friend

When German troops marched into Poland in 1939, the world was turned upside down, where it stayed during the next six years. Sweden was not directly engaged in World War II, although it supported its Nordic neighbors in many different ways. Petrol was one of many commodities that was rationed. Cars and trucks were converted to run on gas produced by burning wood or charcoal. This was a dirty and dangerous business. An alternative was to revert to horsepower. Out with the motor and in with a horse.

Musings of a Dispatcher: Different Shades of Urban

America's anti-city legacy lives on today

WHEN I STUDIED architecture and urban planning at PRINCETON UNIVERSITY, four years as an undergraduate and three as a graduate student, the sites chosen by our professors for the design exercises were cities. At first, the cities were imaginary: a corner lot where we were asked to design a library, or a city block where we would design low-income housing. As we progressed through the academic years, the cities became real and the design briefs more complex: a mixed-use development in Trenton; an art museum in downtown New Brunswick; and a manpower community development training center in Canarsie, Brooklyn, a model of which is shown left. (One of my readers, now the Dean of Architecture at Notre Dame University, will recognize this building that we designed together in a team of five graduate students.) For my Senior Thesis, I developed a program for a community college that I placed in my childhood neighborhood in Scranton which had been cleared of all life following a coal mine subsidence.



Peter Eisenman was known almost exclusively as a theorist and "paper architect," promulgating a highly formalist approach to architecture he called "postfunctionalism." Rather than form following function or an aesthetic design, the design emerged from a conceptual process, and remains pinned to that conceptual framework.

Apparently, there was never a thought given by our professors, about half of whom were from Europe and South America, to designing a shopping center in a suburb, or a single-family dwelling on an isolated piece of land along an ocean shoreline anywhere we might choose. In retrospect, this was odd because some of our professors, like Peter Eisenman, were well-known for designing buildings that were both placeless and timeless, like the one to the left. And we were urban planners, not city planners or transportation planners. We weren't going to be developing zoning regulations or deciding whether roads were one-way or two. We were going to make cities beautiful again.

When I graduated after those seven years, my first two jobs were in government offices in cities. I spent a year at the GREATER LONDON COUNCIL (GLC) designing a technical college to be sited in Thamesmead, a New Town-in-Town located in the London Boroughs of Greenwich and Bexley along the banks of the Thames. (Thamesmead is best known as the site of the 1971 Stanley Kubrick dystopian crime film *Clockwork Orange*.) My second job was with the

BOSTON REDEVELOPMENT AUTHORITY, located in Boston City Hall, which had been opened in 1968 and was situated on a large Athenian/Roman-looking plaza that had been created by demolishing the market core of Boston called Cornhill (see right). I tendered my resignation after four weeks when I decided that I was not going to donate a portion of my salary every week to Kevin White's mayoral re-election campaign.[21] Donations weren't optional.

There was never any question in my mind that I would live in or at least very near a city when I finished my studies. That's where the firms were that would offer me a job, and that's where the choice commissions were. It wasn't the same for all of my classmates. One of them was perfectly happy settling back in his small village in Vermont where his family had lived for generations, and hanging up his architect's shingle on his front porch. But, for most of us, it was New York, Philadelphia, Chicago, San Francisco or one of the up-and-comers in Texas, Georgia, Arizona or Florida.

What would we have done if there had been no large cities to go to in the U.S. when we graduated? That may sound like an odd question, but in 1775, a year before the thirteen colonies declared their independence from Great Britain, there were only three cities of any size in what would become the United States: Philadelphia (population 19,000), Boston (16,000), and New York (14,000). London had a population of around 750,000 at that time. You might think the cities reflected the population of the combined colonies. But the population of the thirteen colonies in 1775 was 2.4 million, of which 80% were of European descent and mostly British, and 20% were of African descent and mostly slaves; Great Britain's population was at this time 8 million.

Something else was happening that began with the founding of the colonies and continues to this day. For different reasons among the settlers, both the desire to build cities and the need for them were much weaker in the New World than they had been in the Old World from which the settlers came. Virginia, which was the largest colony by population in 1775, had no cities of any size at all. Its capital at the time independence was declared was Williamsburg, which had a few thousand inhabitants. The capital was moved to Richmond during the war because the Virginians believed Williamsburg was too exposed to British attack; Richmond was even tinier than Williamsburg. So the question remains: If the settlers to the New World in America came from the Old World in Europe, why didn't they bring their cities with them?

Boston's Acropolis. It's now fifty-four years old. It is no more loved today than when it was built.

21. Kevin Hagan White was the Mayor of Boston from January 1968 until January 1984. His mayoral administration was subject to decades-long federal investigations into corruption, which led to the conviction of more than 20 city hall employees and nearly as many businessmen. The investigations were influential in leading White to decline to seek reelection in 1983. He himself was never indicted for wrongdoing.

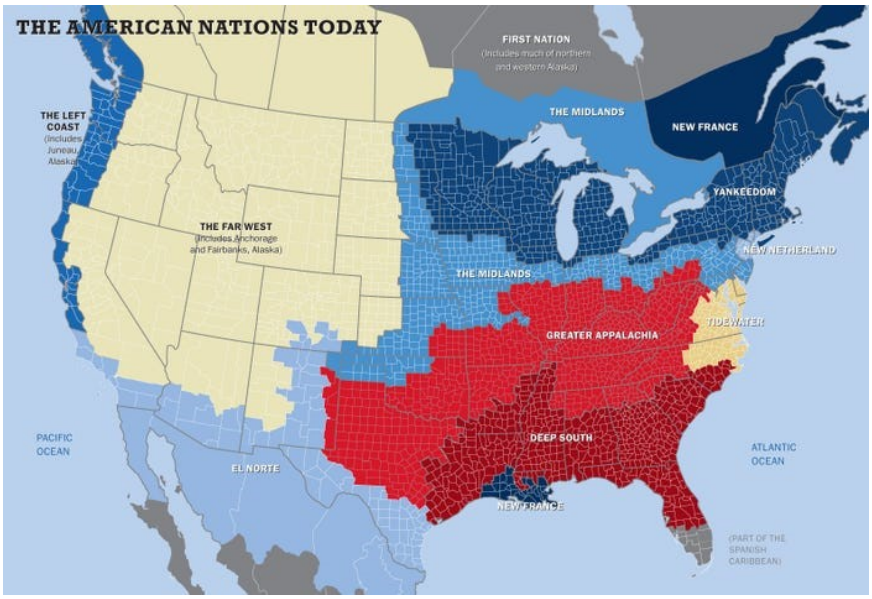
Architecture

Architecture was not always thought of as a profession. The "architect" was the person who could build structures that didn't fall down. In fact, the word architect comes from the Greek word for "chief carpenter," architektōn. In the United States, architecture as a licensed profession changed in 1857. In the United States, architecture evolved as a highly organized profession when a group of prominent architects, including Richard Morris Hunt, launched the AIA (American Institute of Architects). Founded on February 23, 1857, the AIA aspired to "promote the scientific and practical perfection of its members" and "elevate the standing of the profession."

During the 1700 and 1800s, prestigious art academies like École des Beaux-Arts provided training in architecture with an emphasis on the Classical Orders. Many important architects in Europe and the American colonies received some of their education at École des Beaux-Arts. However, architects were not required to enroll in the Academy or any other formal educational program. There were no required exams or licensing regulations.

A nation with cities was not a foregone conclusion

To answer this question we need to go back to the pre-Revolutionary War period in America, well before there was a country. The United States eventually became a sovereign political entity comprised of a federation of smaller political entities called States. The original thirteen States began as colonies. As Colin Woodard explains in his book, American Nations, these colonies formed separate and distinct 'nations', that is, groups of people who shared—or believe they shared—a common culture, ethnic origin, language, historical experience or religion.[22] Individuals, such as William Penn (Pennsylvania) or George Calvert (Maryland), or collectives, such as the Massachusetts Bay Colony or the Barbados plantation owners (Carolinas and Georgia), had been provided with charters from their country's monarch to avail themselves of land which, at the time of the settlers' arrival, had been occupied by indigenous people referred to collectively as 'Indians'. In the case of the thirteen colonies, the monarch was one of the kings of England.[23] For example, William Penn was given title in 1680 to 45,000 square miles of land by King Charles II, and Calvert's gift was from Charles I.



Woodard did not write his book to explain why the first settlers to America did not set out from the start to re-create London, Amsterdam, or any of the large cities of Europe. What he does describe is how the exigencies of life in a land without the infrastructure of Europe that had been built up over thousands of years, and faced with an indigenous population that did not simply acquiesce to the invaders' demands to subject themselves to their rule, forced them into a life they had not expected to live. The

22. Woodard, Colin. American Nations: A History of the Eleven Rival Regional Cultures of North America. Penguin Books; Reprint edition (September 25, 2012)

23. It was the kings of England except for New Netherland. The Netherlands was a republic between 1581 and 1795. The head of the government was the Stadtholder, who was Maurice of Orange when New Amsterdam was being settled.

settlers gradually came to accept that job number one was to survive. Collecting themselves into cities and having all their daily needs delivered to them was not an option. They became agrarian of necessity, and the nature of their agrarianism was reflected in the character of each of the 'nations'.

The 'nations' evolved into images of their founders

The thirteen colonies are grouped by Woodard into six 'nations': *Yankeedom; New Netherland; The Midlands; Greater Appalachia; Tidewater*; and *Deep South*. Each is unique, but what they have in common is the absence of large cities.

Yankeedom comprises the colonies of New Hampshire, New York, Massachusetts, Connecticut, Rhode Island, and the northeastern part of Pennsylvania. The radical Calvinists who sailed into Salem and Plymouth and founded Boston were definitely not interested in recreating the places they left—although either for lack of imagination or a lingering trace of nostalgia, they gave almost all of their settlements the names of English towns, including Boston.[24] The Puritans, and all those who followed them into *Yankeedom*, had a very high regard for education, local control over their environs and their destinies, and a belief that government was an extension of their citizenry that would create a greater good for their community. There is no mystery as to why the most common form of government then, and to a certain extent to this day, is the 'town meeting' where the citizens meet to vote on all measures that affect them.[25] The notion of a large city was anathema to their set of moral and social values because extensive citizen involvement was viewed as essential in the political process.

Walk through the towns that were established by the Yankees, like Salem, Lexington, Concord and even Boston, and you will see the same pattern of a town square, a church, a meeting house and single-family homes, small and large. At the edges, farmlands and forest merge with buildings, and tree-lined streets combine with front and back yards to give the cities and towns a rural charm.

New Netherland encompasses what would be the five boroughs of New York City and Northern New Jersey. New Netherland was the name of the colony, and New Amsterdam was the name of the settlement that eventually become New York. The newly incorporated Dutch West India Company obtained a twenty-four-year trading monopoly in America in 1621, in particular to trade

24. The Founding of Boston

In 1625, William Blaxton, an early English settler, decided to live alone on the Shawmut Peninsula after most of his fellow travelers of the Ferdinando Gorges expedition returned to England. He became the first European colonist to settle in Boston.

*A group of English Puritans founded the Plymouth Colony in 1620, just to the south of Massachusetts Bay. The Puritans encouraged further colonial settlement and immigration to the New World because King Charles I of England was in favor of suppressing the religious practices of Puritans in England. Eventually in 1629, the Cambridge Agreement was signed in England among some of the Puritans, established a self-governing colony, the Massachusetts Bay Colony, and they decided to settle to the New World. John Winthrop was their leader; he would become governor of the settlement in the New World. In a famous sermon before the Puritans' departure, "A Model of Christian Charity," Winthrop described the new colony as "**a City upon a Hill**."*

In June 1630, the Winthrop Fleet arrived in what would later be called Salem, which on account of lack of food, "pleased them not." They proceeded to Charlestown, just across the river from the Shawmut Peninsula; however Charlestown pleased them less, for lack of fresh water.

William Blaxton noticed the Puritan settlement, and invited them to move to the Shawmut peninsula, for the peninsula had an "excellent spring" on the north side of what is now Beacon Hill. The Puritans accepted, acquired the land on the peninsula from Blaxton and Chickatawbut, the Native American sachem. The Puritans eventually settled around the spring near the Beacon Hill; their settlement would eventually become today's Boston. They granted Blaxton some lands in return, which eventually evolves into today's Boston Common.

25. I lived in the Town of Bolton, MA for seven years. Each year, we met to set salaries for the elected officials, vote to appropriate money to run the town, and vote on local by-laws.

in furs with the indigenous people, and petitioned to obtain provincial status for the land along the Hudson River. This was granted in 1623, and the company prepared for creating permanent settlements. In 1626, the Company purchased Manhattan from first the Canarsee (also spelled Canarsie, as in Brooklyn) tribe and then the rightful owners, the Wappinger Confederacy. "New Amsterdam was from the outset a multi-ethnic, multi-religious, speculative, materialistic, mercantile, and free trading, raucous, not entirely democratic city-state where no ethnic or religious group was, or has ever been, truly in charge."[26]

The colony grew slowly because the Dutch people were perfectly happy to stay where they were, in The Netherlands. The Company's fur trade prospered, but it gained little benefit from its land holdings. It tried to change this by offering investors the possibility of becoming lords of their own large estates, or *patroons*. They were given huge estates in return for transporting settlers. The *patroons* had total control over their estates, but few settlers came to farm their lands, either as tenant or indentured farmers.

In 1664, the Dutch were defeated by the British who took over the administration of all the Company's lands. New Amsterdam was renamed for the Duke of York, the future King James II. In time, it became a city like no other. Its boroughs grew and then were incorporated in 1898 into New York City. The Colonial portions of Manhattan retain their small-scale nature, and the boroughs, especially Staten Island, have the appearance of many small-to-medium-sized cities in the U.S.

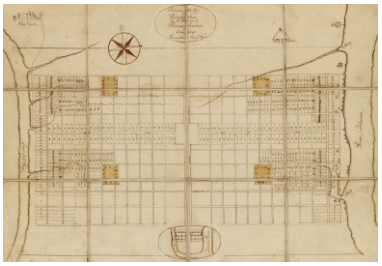
The Midlands extend from Southern New Jersey across the eastern half and the northwestern part of Pennsylvania. It was founded by English Quakers, a religious group considered a radical and dangerous force in 17th century Britain, who were provided with a refuge by a wealthy convert named William Penn. William's father, William Senior, had loaned King Charles II a princely sum of £16,000. When William Senior died, William Junior settled his father's debt in return for a rather large piece of land between Lord Baltimore's Maryland and the Duke of York's New York. The parcel was about as large as England.

Penn did an excellent job of promoting his colony. All religions were welcome without restrictions, and the Quaker religion had no special status. He paid the indigenous people for their land and respected their interests. Philadelphia was the center of government and the port of entry for new arrivals and all the colony's

New Netherland and Slavery

Because of the lack of immigration, the settlers in New Amsterdam relied on the labor of enslaved people more than any other colony at the time. In fact, by 1640 about one-third of New Amsterdam was made up of Africans. By 1664, 20% of the city was of African descent. However, the way that the Dutch dealt with enslaved people was quite different from that of the English colonists. They were allowed to learn to read, be baptized, and get married in the Dutch Reformed Church. In some instances, they would allow enslaved people to earn wages and own property. About one-fifth of the enslaved people were "free" by the time New Amsterdam was taken by the English.

26. Woodard, p. 6.



The Plan of Philadelphia

Penn envisioned a city where all people regardless of religion could worship freely and live together. Being a Quaker, Penn had experienced religious persecution. He also planned that the city's streets would be set up in a grid, with the idea that the city would be more like the rural towns of England than its crowded cities. The homes would be spread far apart and surrounded by gardens and orchards. The city granted the first purchasers land along the Delaware River for their homes. It had access to the Delaware Bay and Atlantic Ocean, and became an important port in the Thirteen Colonies. He named the city Philadelphia (philos, "love" or "friendship", and adelphos, "brother"); it was to have a commercial center for a market, state house, and other key buildings. The grid plan was adapted from a grid plan originally designed by cartographer Richard Newcourt for London.

needs. From the outset, it was to have the feel of a rural town in England, not a bustling city. The rest of the colony was populated by refugees from the religious wars raging in Europe. They were mostly German-speaking Protestants, Lutherans and German Calvinists, and arrived with large extended family groups. Some, like the Amish and Mennonites, were sects that exist to this day. The vote was extended to all. They established farming communities, not cities. Pennsylvania was the only colony in 1775 with a non-British majority of citizens.

Greater Appalachia occupies the western portions of Virginia, North and South Carolina. It was settled by mostly men from the war zone between Scotland and England, men who were used to fighting and knew little else. They passed quickly through the ports where they landed and headed straight for the wilderness, where they continued to do what they knew best. These American Borderlanders despised Yankee teachers, *Tidewater* lords, Deep Southern aristocrats, and most of all, any form of government. They had no time nor need to build cities.

Deep South is made up of Georgia, South Carolina and the southwestern segment of North Carolina. It was founded by Barbados slave lords who ran out of land, the sons and grandsons of the founders of the older English colony, "the richest and most horrifying society in the English-speaking world".[27] They needed land to continue with their lifestyle which was totally built on slavery. They arrived in what became Charlestown, South Carolina in 1670. It was their only city, built for pleasure, their own. The slave lords lived there most of the time, rather than on the sweltering plantations. It became the wealthiest town on the entire eastern seaboard, with theatres, taverns, brothels, cockfighting rings, private clubs and shops filled with fashionable imports from London. They lived in pastel-colored townhouses with tile roofs laid out along streets paved with crushed seashells.

27. Woodward. p. 82.

Tidewater includes most of Virginia, Maryland, Delaware and the eastern part of North Carolina. It was founded by the younger sons of English gentry "who aimed to reproduce the semi feudal manorial society of the English countryside, where economic, political, and social affairs were run by and for landed aristocrats. These self-identified *cavaliers* largely succeeded in their aims, turning the lowlands of Virginia, Maryland, Southern Delaware and northeastern North Carolina into a country gentleman's paradise, with indentured servants and, later, slaves taking the part of the peasants".[28] The aristocrats controlled everything on their

28. Woodward. p. 7.

Note: The practice in England according to English Common Law was to will all property to the oldest male descendant. If there was no male descendant, the property was divided among the females.

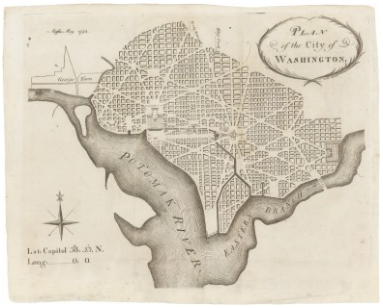
estates, which gradually became primarily tobacco plantations and farms for their own needs. The plantations were self-sufficient communities. They housed their indentured servants, imported from England with the necessary skills to contribute to their household, on their estates. Eventually, they turned to slavery when they could no longer import enough poor and destitute people from Britain.

The 'nation' is called ***Tidewater*** because the tide waters reach into the Virginia, Maryland and Delaware hinterland from Chesapeake Bay. Ships laden with goods from Europe could unload at the docks of each plantation, and load the tobacco and surplus produce for the return trip to Britain. There was no need for a Boston, New York or Philadelphia. The landholders cooperated to build churches and court houses at convenient crossroads. They named their settlements after English royals (e.g. Georgetown, Jamestown, Annapolis, Virginia (Elizabeth, the Virgin Queen).

Tidewater

Washington, DC was designed as a New Athens

This lack of a city tradition prior to independence, especially in the ***Tidewater*** and ***Deep South*** 'nations', but also in the other 'nations' as well, perhaps explains why the representatives to the new Congress relinquished the decisions on the form of the new federal city to George Washington, a Virginian and the country's first President. He, in turn, entrusted the design of the country's new federal city, the District of Columbia (which would also be given his name), to a Frenchman who was trained as an artist at the *Paris Académie Royale de Peinture et de Sculpture* (Royal Academy of Painting and Sculpture), Pierre Charles L'Enfant. There were no schools of architecture and urban planning at the time in the United States. They would come in the mid-1800s. Even *L'École nationale supérieure des beaux-arts de Paris (ENSBA)*, where many of the best early American architects studied, had not established an architecture course of study until 1817. (See Architecture in sidebar on page 16.)



Founding Washington, DC

At the Philadelphia Convention in 1787 the delegates agreed in Article One, Section 8, of the United States Constitution to give the Congress the power:

"To exercise exclusive Legislation in all Cases whatsoever, over such District (not exceeding ten Miles square) as may, by Cession of Particular States, and the Acceptance of Congress, become the Seat of the Government of the United States, and to exercise like Authority over all Places purchased by the Consent of the Legislature of the State in which the Same shall be, for the Erection of Forts, Magazines, Arsenals, dock-Yards and other needful Buildings."

James Madison, writing in Federalist No. 43, also argued that the national capital needed to be distinct from the states, in order to provide for its own maintenance and safety.

It was the Virginians, Washington, Madison and Jefferson, who took the initiative in choosing the location and overseeing the design of the new capital. Inspiration for their new capital was the classical period cities of Rome and Athens. It was not just the style of architecture which served as inspiration. Washington, DC was not intended to be a City on the Hill. It was not a place of physical labor. It was designed to be the capital of a classic republic, like Athens and pre-Empire Rome, a place of reflection and debate. It was the city of the *civitas*, the city which was the center of the

political order. Major cities in the Old World, like Rome, Athens, Paris and Venice, had begun as city states, and men were citizens of those cities. Nation states grew from these cities and their governments controlled life of both the nation and the city.

The *Tidewater* and *Deep South* founders of America emulated both the ways and the mindsets of the learned, slave-holding elite of ancient Athens, personified by Plato. Their philosophy was based around the concept of *libertas*, or 'liberty'. This is fundamentally different from the Germanic concept of *freiheit*, or 'freedom'. It was freedom that was at the heart of those who settled *Yankeedom* and *The Midlands*, and they believed strongly that all individuals are born free and equal before the law. For the classical republicans, most individuals, the unprivileged, are born into bondage. For them, liberty may be granted or withheld by the elite. The new nation's capital was to be a gathering place for the elite, those chosen—principally by their peers—to lead. Everyone else would serve their needs.[29]

29. Woodward. p. 54.

The Civil War ended the domination of America by the believers in *libertas*, but it did not eradicate their culture, one that viewed the city as a source of social and individual corruption. Thomas Jefferson said famously in a letter to Dr. Caspar Wistar on 21 June 1807: *"I am not a friend to placing growing men in populous cities because they acquire there habits & partialities which do not contribute to the happiness of their after life."*

Neither did the growth of the country change the views of the city by the other 'nations'. A century following the Declaration of Independence, the United States extended across the entire continent. California became the 31st State in 1850. By 1875, there were 44 million inhabitants in America. The Industrial Revolution was fueling the flow of men, women and children into the growing number of cities, but American values that were now being formed by a combination of views held by all the 'nations' continued to be rooted in a vision of individual self-reliance and family solidarity within a cooperating community of freeholding property owners where class distinctions were minimal. This agrarian ideal held the qualities of urbanity, sophistication and cosmopolitanism to be seriously suspect. As the country grew, and new 'nations' formed on the West Coast and Far West, the ideals of the founding 'nations' were carried along with the settlers in their Conestoga wagons as they crossed the Mississippi River and passed over the Rocky Mountains.

America: Agrarian ideals in urban settings

I have borrowed this subtitle from an essay written by political scientist Daniel J. Elazar in 1966, one hundred years following the Civil War period.[30] Elazar's intention with *"Are we a nation of cities?"* was to address the contention that there was at the time an "urban problem". He wrote:

"It is generally agreed that the United States is now a "nation of cities,"—to use a phrase popularized by Lyndon B. Johnson—and that this has given rise to a unique and dramatic "urban problem." When a proposition of this kind receives general assent, however, it may be just the right moment to look at it critically and skeptically. The difficulty of understanding the "cities problem" in America is heightened by the existence of numerous mythical assessments of urban reality; particularly since the prevalent urban myths have given rise to all sorts of mythical models for urban improvement."

The foundation of what Elazar claims is the "urban myth", which America had become a "nation of cities", was a U.S. Census Bureau statistic which stated that 70% of the country's 200 million inhabitants lived in urban places. However, the Bureau's definition of an "urban place" was: any settlement of 2,500 population or more. In 1960s America, fewer than 10% of the population lived in cities of over one million inhabitants, and there were only five cities of the more than 6,000 legally constituted cities that had a population of over one million, and only 51 with populations of over 250,000.[31] Further, at the same time that the rural population continued to decline, the percentage of population in urban places of less than 50,000 had increased by 50% since 1920.

In his essay, Elazar addresses each of the arguments used to support the dual claims that America is a nation of cities suffering from congestion on its streets, and in order to remedy this the cities need to become more urbanized with higher living densities and with more centralized government control. The first is the assumption that metropolitan areas around medium-to-large cities are really just some kind of bigger city lacking only a single government to formalize it. Boston is an excellent example of this, with the city of Boston having "only" 676,000 inhabitants, but greater Boston having 4.3 million. As I said in my description of *Yankeedom*, and as Elazar states, "the independent suburban townships and smaller cities (e.g., Cambridge, Newton, Quincy and many more) exist for real reasons. The larger the metropolitan area, the more likely the small cities within it are to value their

30. Elazar, Daniel J. *Are we a nation of cities?* National Affairs. The Public Interest. (1966). https://www.nationalaffairs.com/public_interest/detail/are-we-a-nation-of-cities

Elazar was a leading political scientist and specialist in the study of federalism and political culture.

31. New York City (7.8 million); Chicago (3.6); Los Angeles (2.5); Philadelphia (2.0); and, Detroit (1.7)

autonomy and their separate identities." This is in marked contrast to China, where cities expand their boundaries as new areas are built with the central city governments expanding their zone of control.

Elazar states that there is absolutely no proof there is a public interest in favor of the radical "citification" of the United States, that people would like nothing better than to make their cities modern versions of Florence, Rome or Paris. "Whatever changes the American people seem to be seeking," writes Elazar, "they are not directed toward the enhancement of the facilities that lead to an urbane or citified life, but rather to the introduction into the city of qualities associated with the rural life—trees, cleaner air and water, larger parks, or new family-style dwellings to reduce overall density of population".

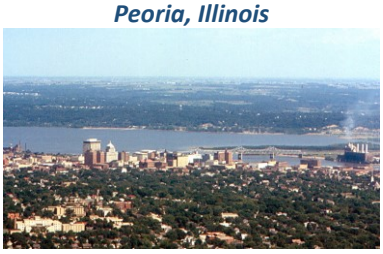
Why can't Peoria be more like Pisa?

My university architecture professors were preparing us to recreate Pisas, not Peorias, when we finished our studies.[32] We were being trained to design copies of Rome and Athens, with plazas and boulevards where the citizens could promenade while discussing the latest fashions in dress and thought. Housing desgined and built for the workers, those tending to the needs of the elite, should be as humane as possible, given the constraints of budget and space. They should be dense so that everything and everybody was as close to each other as possible, just like in cities like Pisa, Paris and Venice. As Daniel Elazar so eloquently explains in his essay, there was just one, not so small problem with this approach to teaching architecture and urban planning in America: American cities were not like the cities in Europe or anywhere else, and the people living in them weren't like the people living in the cities in Europe—even if that is whence they came—and neither the cities nor the people were about to change anytime soon.

32. To be fair, there was no difference between any of the schools of architecture at the time. Change would begin in 1969 with community advocacy, but that is part of another story.

Pisa, Italy

Peoria, Illinois



Peoria's population is 113,150, while the population of Pisa is 91,104. Looking at Pisa from above, you might spot a tree here and there. Peoria looks like it has grown out of the forest. When Elazar was writing his essay in his office at Temple University in Philadelphia, the City of Brotherly Love in the heart of the great Boston-Washington 'Megalopolis' was the fourth largest city in

the country with a population of just over 2 million. It had a 70% rate of owner-occupied housing and 6 million trees within its city limits, 3 per person!

"American cities developed through a relationship with their hinterlands in a special pattern of suburbanization which can be considered unique and characteristic. The urban center has been surrounded by satellites—villages or cities—that stand in what we would call a metropolitan relationship to the center."[33]

33. Elazar.

In May, 2020, the U.S. Census Bureau released its latest population estimates for cities and towns. These estimates reveal that most of the nation's population live in incorporated places. Of the nation's 328.2 million people, an estimated 206.9 million (63%) lived in an incorporated place as of July 1, 2019. About 76% of the approximately 19,500 incorporated places had fewer than 5,000 people. Of those, almost 42% had fewer than 500 people. Only 4% of the incorporated places (780) had a population of 50,000 or more in 2019, but nearly 39% of the U.S. population (127.8 million) live in those cities.

What is most important to understand when viewing these statistics is that there are significant regional differences. Overall, between the last census on April 1, 2010 and July 1, 2019, large cities in the South, that is, places with a population over 50,000, grew at a faster pace (11.8%) than in any other U.S. region. Large cities in the West grew by an average of 9.1%; in the Northeast and Midwest, large cities had respectively 1.5% and 3.1% growth rates. Midsized cities in the Northeast, places with populations of at least 5,000 but less than 10,000, had declines of 0.9%. Small towns are getting smaller in the Northeast and Midwest, and larger in the South and West. In the West, small towns increased by 13.3%.

U.S. City	2020 Population (millions)
New York City	8.6
Los Angeles	4.1
Chicago	2.7
Houston	2.4
Phoenix	1.7
Philadelphia	1.6
San Antonio	1.6
San Diego	1.5
Dallas	1.4
Austin	1.0
San Jose	1.0

The growth of cities in the West and South is occurring in the same way as it occurred in the Northeast and Midwest up to the time of the Depression, by cities annexing newly-settled suburbs. New York City is the prime example of growth by annexation. As I stated earlier, this practice never took hold in *Yankeedom*, where local control was paramount. The practice stopped everywhere when the suburbs began to feel they were giving up too much control, and that their suburban lifestyle was in danger of being sacrificed to the hunger of real estate developers for cheaper land. If history is any indication of what will happen with the up-and-comer cities, like Austin, Texas, they will continue to grow as

long as the residents at the edges don't feel like they are being citified.

They're not suburban communities; they're small cities

I urge you to read Woodward's book and Elazar's essay. I have attempted to summarize their main points, but there is so much more in them. You will gain an understanding of and appreciation for why America's cities, large and small, have cars parked in driveways of homes that are within walking distance of the city hall, why there are predominantly single-family homes and duplexes that have above- and below-ground swimming pools and Jacuzzis in their back yards, why smoke and the aromas from charcoal grills fill the summer air, and why grass lawns with flower beds invite visitors up to the front steps of many city dwellers' homes.

"It is a mistake to assume that urbanization in America stands apart from the other influential movements uniquely important in the American experience, or that Americans view the proper ends of urbanization apart from their larger view of the proper ends of life—their overall set of values. Unless urbanization and the responses to it are considered in relation to, if not in the context of, such values as federalism, freedom to make choices about life styles, the agrarian spirit, and the concern for "the American way of life," we fall prey to mythical assessments of urban reality and to the building of mythical models of urban improvement. In fact, the American urban place is a non-city because Americans wish it to be just that. Our age has been the first in history even to glimpse the possibility of having the economic advantages of the city while rejecting the previously inevitable conditions of citified living, and Americans apparently intend to take full advantage of the opportunity. If we wish to make a realistic approach to our real urban problems, we would be wise to begin with that fact of American life.

Daniel J. Elazar (1966)

My father painted this picture of the home where I spent the first fourteen years of my life eight years after we had to leave it as a result of a mine subsidence. It is his idealized version in which ours is the only house on the block. Our neighbor's house on the left was only six feet from our house. I am on the swing in the trellis. My sister is on her tricycle with our dog Sport running alongside. My mother is cutting the grass, watched over by our cat, Charlie Brown, while my father reads a book in a lounge chair. Our neighbor's boxer, Duke, is ready to spring into action as soon as someone calls his name. We didn't have a lounge chair, my mother never cut the grass or tended the flowers. Those were Dad's jobs, and I got to cut the grass when I was ten. My father and mother may have read books, but I never saw them doing so. They were too busy with their jobs. Both of them had day jobs, Mom took care of the house and Dad had a sign painting business on nights and weekends. But the yard is exactly as it was, including the flowers and the flag. Dad was a veteran, and he marched with his Post every 4th of July, and went to funerals for veterans with a flag for the family. As I wrote in an earlier issue of THE DISPATCHER, from my bedroom window, the one on the left side front, second floor, I could see the center of Scranton, across train tracks, the polluted river, the gas house, the train yards, Scranton Silk Mill and Williams Bakery.

About Michael L. Sena

Michael Sena, through his writing, speaking and client work, attempts to bring clarity to an often opaque world of highly automated and connected vehicles. He has not just studied the technologies and analyzed the services. He has developed and implemented them. He has shaped visions and followed through to delivering them. What drives him—why he does what he does—is his desire to move the industry forward: to see accident statistics fall because of safety improvements related to advanced driver assistance systems; to see congestion on all roads reduced because of better traffic information and improved route selection; to see global emissions from transport eliminated because of designing the most fuel efficient vehicles.

This newsletter touches on the principal themes of the industry, highlighting what, how and why developments are occurring so that you can develop your own strategies for the future.

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