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### **The October 2022 Issue in Brief** **Electric Vehicle Batteries**

*We believed there were enough minerals to make the batteries, but we were wrong. We believed we could produce enough batteries, but we were wrong. We thought we could generate enough electricity to charge them, but we were wrong. We had a hunch that we could recycle the car batteries to make up the difference in minerals, but we did not understand the difficulties. We sincerely hoped that China and Russia would become our cooperating partners, but those hopes were not fulfilled. Time to take a step back.*

#### **Dispatch Central**

U.S Inflation Reduction Act – On the whole, it's better than nothing. There's a lot in there for transport.

Grade crossing warnings in Sweden – They never should have been allowed, but Sweden makes an effort to mitigate their danger.

Catching tire particles – A group of young engineers does something really useful for the environment.

Data: Singular or Plural – The Economist grammar general makes a concession to common sense.

Quick Transactions – Short takes on topical issues.

### **Musings of a Dispatcher: Hood Ornaments**

*Once upon a time, during the car era's first one-half century, every brand and model had them. Some were simply utilitarian, designed to function as a radiator cap, but first luxury brands and eventually standard brands made them into works of art, like the Pontiac Chief.*



*They were always more than decoration. They were good luck charms that kept us safe on our journeys and had their origins in the figureheads which were used to ward off evil spirits on the earliest vessels. We can still see them on classic cars—if they have managed to keep them from being stolen. I have tried to bring them back to life in this Musings.*

## Batteries: Theme of the Next Mad Max Dystoposeries



### Read This First

China saw electric vehicles as its wedge that would allow it to capture the majority of all global vehicle sales. CHINA, INC. not TESLA, created the battery electric vehicle market. It was a well-thought-out strategy which began in the wake of the financial crisis when in 2009 the Chinese market passed both the U.S. and Europe in total vehicles produced and sold, but with Chinese firms clearly unable to compete with offerings from the U.S., EU countries, Japan and Korea. Did China go further, using its soft power to support groups in the West that were pushing politicians to do something about climate change: give subsidies and tax breaks to buy BEVs; increase taxes on fossil fuels; set a deadline on the sale of ICE vehicles? We can only speculate. China certainly helped TESLA by rewarding it with a license to be the first Western car maker to be able to build a production facility without a Chinese JV partner. Once the world has electrified all cars and banned ICE vehicles, because China controls the minerals and their processing into batteries, China will be able to charge whatever it wishes for people in Western countries to have the right to drive. If things keep going the way they are going, more than one-half of those cars will be Chinese brands.

### *In 2022, Mad Max gangs want lithium*

IN THE PAST, when a country believed it was not receiving enough of a resource that it felt it needed and deserved, it went to war to take it. Gold, silver, tea, spices, cotton, cod, coal, grain, oil and many other commodities have been the causes of nations attempting to steal land and seas from other nations. There are countless numbers of movies that show us the horrors of war, but the post-apocalyptic *MAD MAX* film series gives us a glimpse of what it could look like after all the big wars have been fought and lost. Warlords and their gangs prey on survivors of the wars that caused societies everywhere to collapse. They battle each other over gasoline, water and food. Are we trading wars over oil for wars over lithium, cobalt, nickel and rare earth metals, jumping from one frying pan into another? As governments continue with their policies to dramatically increase demand for these commodities, the chances for expanded conflicts increase. In many areas, they have already begun.

Western democratic countries, particularly the U.S. and those within the EU, are forcing battery electric vehicles (BEVs) into the market with extremely generous government subsidies for purchasing them and extraordinarily high taxes on buying internal combustion engine (ICE) vehicles and the fossil fuels that run them. They say the reason for their exceptionally strong actions is to halt climate change. The real motive, however, is to eliminate once and for all their dependence on oil and the countries that supply it, especially countries that are not nor probably never will be democracies. Governments may dress up this motive with green ribbons and bows, but the prime purpose remains apparent. There is just too much evidence to show that the net reductions in greenhouse gas emissions when all factors are considered, particularly the generation of electricity to produce the batteries and run the vehicles, are just too low to make all the cost and efforts worthwhile if it is simply to reduce greenhouse gas emissions.

China also wants to be free from its oil dependence. It is one commodity for which it has not been able to corner the market. China has become the largest market for cars, but it must import all the oil to fuel its vehicles. It, too, has a major incentive to be free of ICE vehicles. An added incentive for China is that it can more easily produce BEVs than ICEs because it controls 80% of the value chain for what goes into the batteries for BEVs, and it has made zero progress outside of China with its own ICE vehicles. So any thoughts that China is pushing electric vehicles for climate change purposes are completely naïve. China produced 63.6% of its electricity in 2021 from coal. Unfortunately, for the rest of the planet, all those emissions that happen in China don't stay in China.<sup>1,2</sup>

While they have not exactly led the charge, or even cheered from the sidelines—with the exception of TESLA—North American, European and Japanese automakers have quietly acquiesced and begun to convert their assembly lines to BEV production. They are looking on as Chinese automakers have started to introduce their vehicles into countries where they could never have competed with their ICE offerings.

Western automobile manufacturers are silently living a lie, and they know it. But they are hoping that once the world is close to being over its head in the reality of the situation—when they cannot produce the batteries that are needed for all the BEVs that consumers must purchase, and they cannot produce enough electricity to charge the cars—someone will miraculously come up with a solution. Don't count on any of the climate activists being among the inventors. They are too busy gluing themselves to road surfaces (see *Dispatch Central*). It didn't have to be this way.

*Wait a second before hitting the eject button*

This is not another BEV-bashing article. My purpose in writing "Batteries" is to provide the decision-makers, the deciders, with the information they need to make better decisions than the ones they are now making regarding the future of transportation. Where we are heading with current vehicle electrification policies is where we are today with ill-conceived energy policies which were made over the past fifty years. We have decision-makers now standing in front of their constituencies and the world speaking in the past exonerative tense: "Mistakes were made." Russia lured Europe in general and Germany in particular into putting their energy future into Russia's hands in the belief that, like a leopard, it would change its spots and become a democracy. It didn't; as with the scorpion in the fable to the right, it is clearly

1. <https://www.statista.com/statistics/1303338/coal-electricity-production-in-china/>

2. The energy crisis has seen Beijing shift its political discourse and proclaim energy security as a more urgent national mission than the green energy transition. Now, the government is investing in a new wave of coal-fired power stations to try to meet demand.

<https://phys.org/news/2022-08-china-energy-crisis-world-emitter.html>

*"People. They want electric cars, but not cobalt mines. Fossil free, but no wind turbines. Wooden houses, but no forest industry. A habitable climate, but no particles in the stratosphere. It is as if they want to run a restaurant, but then realize that all the raw ingredients depend on exploiting nature, so they don't buy anything. One could say that the menu will be very empty."*

Jonas Gren, in his book Kromosomparken, Weyler Publishing. (2022)



not in its nature to do so. We are now experiencing the result as Russia holds Europe hostage while it ravages Ukraine. China was welcomed into the global economic community with a similar hope, that it would move away from its autocratic ways. It has not. Democracy is also not in its nature. On the contrary, it ignored its agreement on Hong Kong, is occupying and fortifying island territories claimed by its neighbors, and it is now threatening Taiwan. It is well on its way to doing with all forms of mobility, from cars to trains to buses and those infernal e-scooters, what it has done with steel, aluminum, concrete, laptop computers, baseball caps, surgical face masks, and almost everything else.

### **It's not too late to take a step back**

I want to make the case for slowing down the further introduction of battery electric vehicles in favor of promoting both more efficient ICE vehicles and hybrid electric vehicles (HEVs), which charge on-board batteries through regenerative braking and by their internal combustion engine. There are other options on the horizon, but we do not need any more new infrastructure or technical breakthroughs when ICEs and HEVs can satisfy our transportation needs. I want to convince you that the advantages to democracies of pumping the brake pedal on automotive electrification will cause less climate damage in both the short and long term, will cause less environmental damage than the current pillaging of minerals is causing, and will have the further positive effect of stopping the wholesale turnover of yet another industry to China.<sup>3</sup>

Let's tackle each one of these issues one at a time.

#### *China, the BEV Baron, is gobbling up global mineral rights*

Railroad barons in the mid-nineteenth century bought land where they envisioned their train lines would run, and they acquired the mineral rights to coal and iron in order to control both the production and operation value chains. They did this in secrecy, mostly through front men acting anonymously. When they had bought up everything they needed, they unveiled their empires. The railroad monopolies were eventually broken, but not before the barons amassed enormous fortunes. They retired to their estates when the end of railroads that ran on coal was already in sight.

China has done the same with the raw materials needed to build batteries and battery electric vehicle components. China used the railroad barons' playbook to the letter, working in secret to buy

*I first noticed and began writing about the impending threat China posed to the economies of Western countries in 2008 in my book [Beating Traffic: Time to Get Unstuck](#). I had been there for the first time in 2007 and saw first-hand how China had already made significant progress on its goal to dominate in all areas of manufacturing since it was invited into the World Trade Organization in 2000.*

3. The U.S. Inflation Reduction Act (see Dispatch Central) requires BEV buyers who want a tax credit of up to \$7,500 for buying a BEV to purchase one that is mostly assembled in North America (U.S., Canada and Mexico) and uses batteries that contain minerals that come mostly from North America. China is already having meetings with states who will be giving them tax break to set up shop, and will certainly want to invest in mining capacity if the U.S. government can clear the approvals and permits hurdles. The U.S. represents around 15% of global sales, and if it can't supply the batteries or set up production facilities, it can do well enough supplying the rest of the world until it is ready to buy GM, Ford or Tesla. And when China starts delivering its super-cheap BEVs, customers won't need a tax credit to buy them.



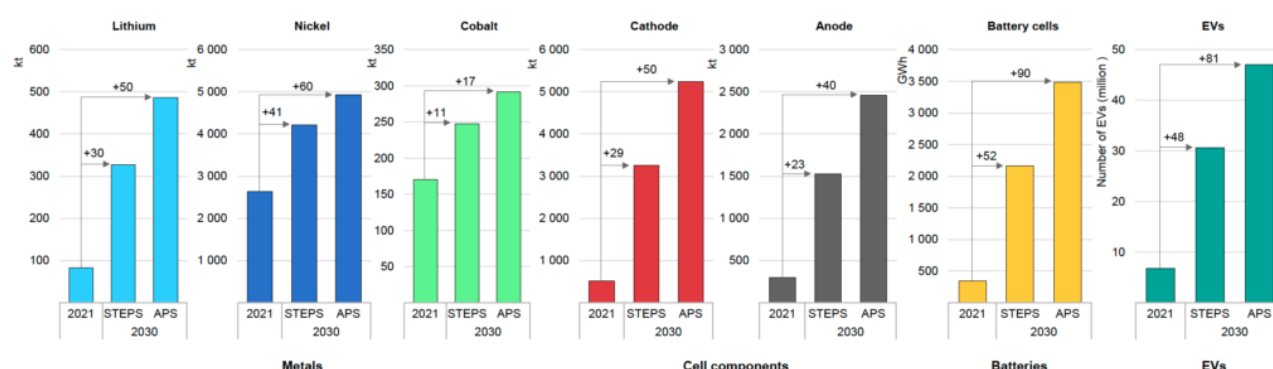
mineral rights all over the world, and, at the same time, building up its capabilities to process the raw metals and build batteries. By 2019, Chinese chemical companies accounted for 80% of the world's output of raw materials for the batteries that go into electronics and battery electric vehicles. China has only 1% of the world's cobalt reserve, but it owns eight of the fourteen largest cobalt mines in the Democratic Republic of Congo that is the source of close to 70% of all cobalt. And China controls 80% of the cobalt refining industry. China's TIANQI LITHIUM owns 51% of the world's largest lithium reserve in Australia. It is the second-largest shareholder in SOCIEDAD QUIMICA Y MINER, the largest lithium producer in Chile. China mines only 6% of the world's manganese, but refined 93% of it in 2019. Nickel accounts for about 7% of nickel consumption today, but that percentage will skyrocket if all the BEVs being promised are built, and China controls 65% of nickel processing.<sup>4</sup>

Hundreds of new mines are required to meet 2030 battery metals demand, says the INTERNATIONAL ENERGY AGENCY (IEA) in its *World Energy Investment 2022 Report*.<sup>5</sup> The report says there will need to be 50 more lithium mines, 60 more nickel mines, and 17 more cobalt mines by 2030 compared to what existed in 2021 if the world's *Announced Policy Scenarios* (APS) are going to be met. These are statements by countries like the UK, states like California and regions like the EU, that sales of ICE vehicles will be stopped in favor of BEVS.

4. The source for these statistics is <https://www.instituteforenergyresearch.org/renewable/china-dominates-the-global-lithium-battery-market/>

5. <https://www.iea.org/reports/world-energy-investment-2022>

Number of mines to produce required levels of metals, anode/cathode production plants, battery gigafactories and EV plants required to meet projected demand in 2030 relative to 2021



While the report does not say it directly, it certainly gives enough clues that bringing this much new mineral capacity is not going to happen by 2030 or even 2040. Lead times for bringing new mines online, from feasibility to production is over ten years, and it takes several more years to reach production capacity. In the meantime, forcing electrification of vehicles is putting enormous

STEPS – Stated Policy Scenarios  
APS – Announced Policy Scenarios

pressure on the price of minerals that can be found in a limited number of countries and which are now controlled to a large extent by China. There is currently a shortage of lithium because of the global push for electrification of everything. New projects are coming on line, but they are mostly in China with lower-grade deposits that are more costly to process than the lithium mined in Australia or obtained from Latin America's brine ponds. Cobalt is coming mainly from the Democratic Republic of Congo and Indonesia, and supplies have stabilized, but within five years they are very uncertain. Thirty-seven percent of the world supply of nickel comes from Indonesia, but it is not a high enough grade to be used for automotive batteries. Refining this nickel emits three times the amount of CO<sub>2</sub> than the higher-grade nickel from Canada and New Caledonia.

This last point highlights the other mineral-related problem with forcing electrification of vehicles. Peter Carlsson, founder of NORTHVOLT and former purchasing and logistics director for TESLA, says that most of the batteries being produced today result in very high carbon dioxide emissions, between 100 and 150 kilograms per kilowatt hour, and half of that is because they are produced in China where the electricity is dirty, dirty, dirty. According to figures from TRAFIGURA RESEARCH reported in *THE ECONOMIST AUGUST 20<sup>TH</sup> 2022*, China is processing almost 75% of all lithium, 80% of Nickel, and 80% of cobalt.

#### *Battery production numbers just don't add up*

As reported in *THE ECONOMIST* article referred to earlier, Bernstein has estimated the battery capacity required for electric vehicles in all markets if the current forecasts hold through 2030 is over 2.5 Terawatt-hours (TWh), or 2,500 Gigawatt-hours (GWh).<sup>6</sup> Its estimated total is for the lower *Stated Policy Scenarios (STEPS)* as shown in the IEA report. But, for the higher *APS*, the IEA estimates that the demand will increase from 340 GWh today to over 3,500 GWh by 2030. Bernstein says that if all the planned capacity additions of the six largest battery makers is added up, it comes to just 1.3 TWh by 2030. The remaining 1.2 TWh of batteries for STEPS or 2.2 TWh for APS would have to come from newcomers like NORTHVOLT. That will be a very tall order. If all goes well for NORTHVOLT and it does actually start producing batteries in 2025, it will add only 150 GWh by 2030 in the best of cases.

As supplies of minerals tighten, and capacity to build batteries is stretched to the limit, the laws of supply and demand kick in. Prices of batteries are rising for the first time in over a decade.

#### *Skyrocketing Lithium Price*

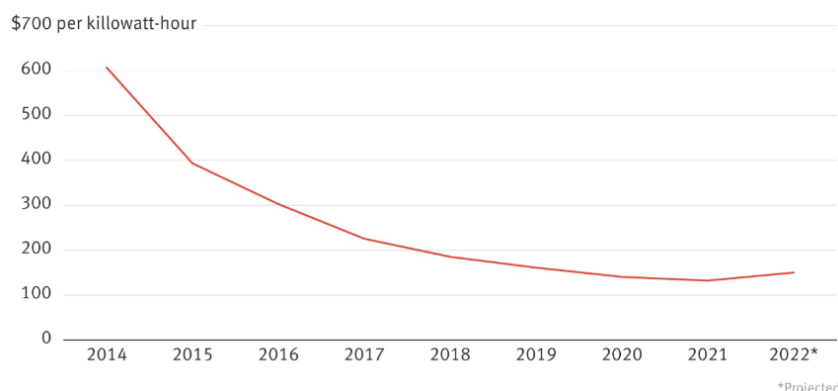
*On the 16<sup>th</sup> of September, the price of lithium set a new record of \$71,315 per ton. The price record was set in China, and was 500,500 yuan. The price for lithium has more than tripled during the past year, driven by strong demand and disruptions in production in China due to COVID-19-related lockdowns and cuts in electricity generation due to excess demand during August. The China Passenger Car Association raised its forecast for the number of BEVs that will be sold in China during 2022 to 6 million, double the number sold in 2021. China's government has announced that it is encouraging new exploration and promoting recycling. Whatever is done in the long term, battery prices and prices for the cars that use them are only going up.*

6. Founded in 1967, Sanford C. Bernstein started as a private securities firm under the name of its founder, an industry icon and contrarian pioneer. Under his vision, Bernstein grew into one of the largest independent investment managers and to this day is synonymous with exemplary research. Through the years, amid the complexity and chaos of Wall Street, our aim has always been to guide clients to steadier ground.

The IEA says that BEV battery prices are expected to increase 14% in 2022 to \$150/kwh. Besides tight mineral supplies, prices have also been effected by supply chain disruptions caused by COVID, and **Russia's unprovoked and unjustified attack on Ukraine**. Tesla had to raise its prices several times over the last year, including twice in March after Elon Musk warned that Tesla was "seeing significant recent inflation pressure" in raw materials prices and transportation costs. Most Tesla models are significantly more expensive than they were at the beginning of 2021. The cheapest "Standard Range" version of the Model 3, Tesla's most affordable vehicle, now starts at \$46,990 in the United States, up 23 percent from \$38,190 in February 2021.<sup>7</sup>

### Losing Power

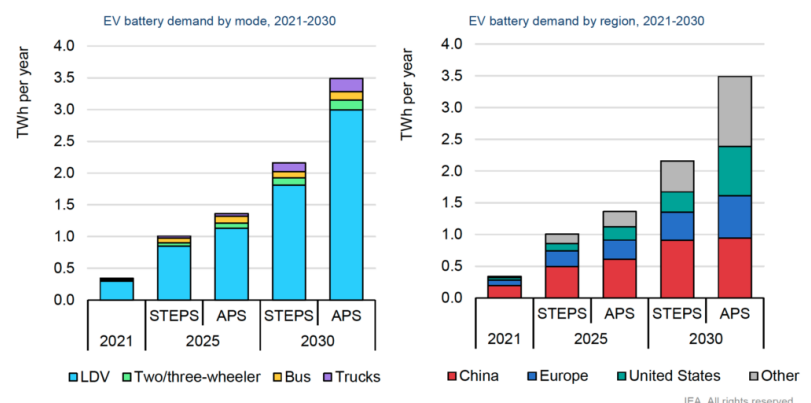
The costs of EV batteries are projected to increase this year for the first time in more than a decade.



### Will there be enough electricity to charge a billion vehicles

All of those 50-80 million-or-so new battery electric cars and plug-in electric hybrids sold every year when ICE vehicles are banned will need to be charged.<sup>8</sup> There is a simple question that must be answered: Can BEVs be charged with enough electricity so they can travel as far as their drivers need or want to go? The simple answer is 'No', not by 2030, and 'unlikely' by 2035. Getting to that answer involved many twists and turns. First, you need to get your head around the three components of electricity that need to be considered when discussing whether, how and when a billion battery electric vehicles can be charged. First is the amount of electric power (electricity) that is produced/generated. It varies over the course of a year in different places for many different reasons. We will take the global average generation. Second, is the maximum level of electricity that all power plants taken together can

Battery demand surges in all regions driven by battery electric cars



7. <https://www.instituteforenergyresearch.org/renewable/electric-vehicle-prices-rise-as-battery-costs-increase/>

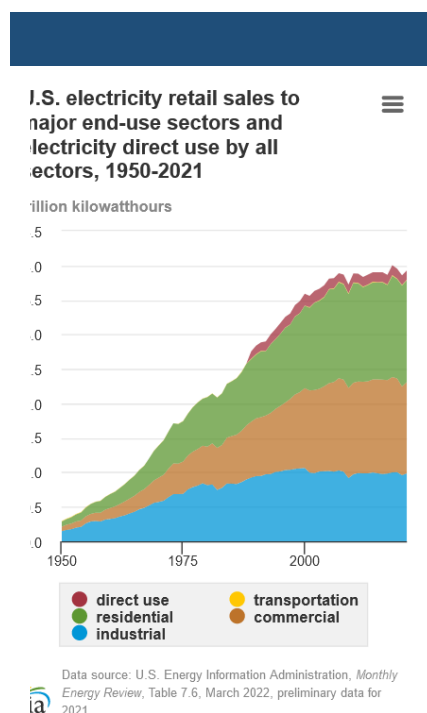
8. Using the numbers in the IEA report for the number of BEVs that will be in the market in 2030, it is 48 for STEPS and 81 for APS.

supply at a specific point in time under certain conditions, which is referred to as ‘capacity’. We will take the annual average capacity of all power sources. Third, is the amount of electricity that is being used, called ‘consumption’ or ‘demand’, for which the capacity has been built along with some margin for growth.

In 2021, the global electricity consumption for all purposes was just under 25,000 Terawatt hours, with the U.S. owning about 4,000 TWh of that amount.<sup>9</sup> You don’t need to strain your eyes trying to find the amount of consumption there was in 2021 for transportation in the U.S. looking at the graph to the right. It is infinitesimal and was principally to public transit agencies. What we are trying to calculate is the amount that would be added to similar charts for U.S., Europe, China and everywhere else when those billion cars hit the pavement.

Global electricity generation in 2021 was just under 29,000 TWh, with the U.S. generating 5,108 TWh. So we generate more electricity than we use, but, according the Electric Law of Supply and Demand, that is not possible. Supply of electricity fed to the electric grid must equal supply, otherwise there is a blackout or brownout. If you feed in too little, the electric frequency drops below 50 Hertz in Europe or 60 Hertz in the U.S. Remember when you plugged your European hairdryer in at the U.S. hotel and it struggled to blow hot air. If you feed in too much, the frequencies increase, and you could fry your U.S. hairdryer if you plugged it in in Europe. Where is that extra 4,000 TWh going? We can account for 5% being lost in transmission and distribution, and another 5% going into the actual production of electricity, so that accounts for 2,500 Terawatt hours. What happens to the other 1,500 Terawatt hours of generation? One source said that power companies had agreements with some customers to turn on lights and other equipment, presumably at no fee, if there was too much electricity in the grid.

Now to capacity. The U.S. OFFICE OF NUCLEAR ENERGY provided the most understandable explanation of this topic, but it took a few hours of searching to find it.<sup>10</sup> “Capacity is the amount of electricity a generator can produce when it’s running at full blast. This maximum amount of power is typically measured in Megawatts (MW) or kilowatts and helps utilities project just how big of an electricity load a generator can handle.” Different types of power plants have different capacity factors. A plant with a capacity factor of 100% means it produces power all the time, twenty-four hours a day. Such a plant does not exist. Coal and gas plants have



9. <https://yearbook.enerdata.net/electricity/electricity-domestic-consumption-data.html>

10. <https://www.energy.gov/ne/articles/what-generation-capacity>



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12. <https://euan-mearns.com/how-much-more-electricity-do-we-need-to-go-to-100-electric-vehicles/>

12. <https://euan-mearns.com/how-much-more-electricity-do-we-need-to-go-to-100-electric-vehicles/>

12. <https://euan-mearns.com/how-much-more-electricity-do-we-need-to-go-to-100-electric-vehicles/>

could have come up with from the start, and it's the one we have. It doesn't get any more perfect (or imperfect). If you are on the other side of the spectrum along with logical positivists like A.J. Ayer, you don't have time for silly notions of world-designing. If you can't see it, it doesn't exist. Miracles WILL NOT HAPPEN.

It cannot have escaped anyone, except, perhaps, the Super Glue road terrorists, that there is a war raging in Ukraine, and the perpetrator of that war, namely Russia with its abominable (not indomitable) leader, has cut off its supply of natural gas to Europe. Europe, through its own miscalculations ("Mistakes were made.") created a total dependency on Russia for this commodity in order to generate electricity, closing nuclear energy plants for political reasons and coal-fired energy plants for environmental reasons. It has feverishly tried to make up the difference with wind and solar, but it has not been able to so. When Europe was at its most vulnerable, Russia acted on what was obviously a long-planned strategy to raise the price of both its oil and gas and annex all those fine fields of grain in Ukraine. The result of this miscalculation is that electricity prices in Europe have risen anywhere between 300-to-1000%.

#### *Recycling BEV batteries is not the same as recycling beer cans*

Beer cans don't explode. Peter Carlsson was asked by a journalist who wrote a feature on NORTHVOLT in May 2022 issue of *Dagens Nyheter* whether he thought there were enough raw materials to build the necessary number of batteries to feed the market. He had just told the journalist that when NORTHVOLT's factory in the north of Sweden is fully operational, it will be using 10% of the world's current supply of lithium, and around 5% of the supply of cobalt and graphite, based on 2019 production. His answer was, "Yes, I think so. We eventually will build a circular system where many of the products will go back to build new products."

Next to NORTHVOLT's new battery factory is the start of another factory that will recycle batteries. Carlsson says it will be the biggest battery recycling plant in Europe, and the first that will be able to recycle lithium. Then he reflects: "But we've got major challenges there. The biggest one is how we discharge the battery packs down to zero." NORTHVOLT has a goal of using 50% of its old batteries in new production by 2030. He's just saying what the proposed updated *EU Battery Directive* has said, that the industry must recycle 50% of every BEV batteries. But there is not a single company that is able to say for certain that such a level is achievable for BEV batteries, not even NORTHVOLT.

Oddly, one of the potential “spanner in the works” issues with recycling is TESLA’s announcement a year ago that it would phase out the use of cobalt in its batteries. It seems that if cobalt disappears, the economic justification for recycling evaporates.

Recycling has increased over the past few decades, but there are too many factors working against a totally circular production chain. We recycle only 9% of plastic waste. Aluminum is an ideal material to recycle. It doesn’t explode; it doesn’t emit harmful gases; it shreds and melts easily. But only around 30% of new products are made with recycled aluminum. ([See the September issue of The Dispatcher.](#))

*For dictatorships, environment will always be secondary*

There are plenty of minerals in the democratic countries. There is an abundance of nickel and copper in Sweden, along with rare earths. The problem is that they cannot be extracted because of all the red tape involved in gaining approvals to mine, or because the process of mining or processing the minerals places a very heavy burden on the surrounding environment, emits harmful emissions or toxic chemicals into the ground water. So instead of developing alternatives to ICE vehicles that do not require the minerals that can only be mined in countries where workers’ health and safety are not prioritized, or in countries that are controlled by hostile governments (Russia), we (governments) have pushed ahead with battery electric vehicles because politicians have been convinced that they are the one and only way to eliminate greenhouse gas emissions from vehicles, and seen the only alternative to replacing ICE vehicles with BEVs as banning all vehicles completely.

If you begin with an questionable premise, you end up with an uncertain result. China began with a verifiable premise: If all countries make battery electric vehicles mandatory, China might be able to control the production of most, if not all, vehicles. Then they went about methodically buying up the rights to the necessary minerals, building the production facilities for processing the minerals and producing the batteries, and through joint ventures and other means, developing the capability to build electric cars. Then, they directed their own car companies to start building BEVs and providing incentives for Chinese consumers to buy them to show the world that it could be done. Did China also begin to support the BEV promoters in the same way that it built up its overwhelming lead in BEV batteries and electric car technology,

***Even California admitted it was wrong***

*In 1990, California passed legislation requiring that 2% of the vehicles sold in the state by 1998, 5% of the vehicles sold by 2001, and 10% of the vehicles sold by 2003 be zero-emission vehicles. The legislation had to be rescinded when the ZEVs failed to materialize. It’s at it again, banning the sale of ICE vehicles beginning in 2035. We’ll see how that works out, but at least we know they are not ashamed of admitting that they have been wrong and correcting their mistake.*

behind the scenes? Why wouldn't it when it has used its 'soft power' to shine its image in many other areas.

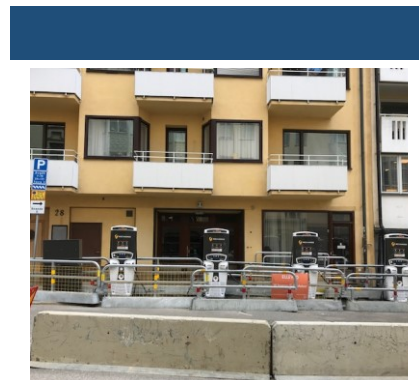
*Do we really want to create a charging station jungle? Really?*

Besides all of the copper to connect them, and the concrete and pavement that needs to be dug up and replaced to install them, these suckers are just as ugly as the gas pumps they are replacing. It's the so-called environmental parties that are uglifying the landscape.

### **There is nothing wrong with correcting a mistake**

There should be no shame in using the simple past tense and admitting that "We made a mistake, and we are going to correct it." The mistake was not that companies started building battery electric vehicles and people began buying them, but that governments started trying to control and direct the market to build BEVs and to push consumers through the use of sticks and carrots to buy them without knowing for sure that they could be built and operated in sufficient numbers. We believed there were enough minerals to make the batteries, but we were wrong. We believed we could produce enough batteries, but we were wrong. We thought we could generate enough electricity, but we were wrong. We had a hunch that we could recycle the car batteries to make up the difference in minerals, but we did not understand the difficulties. We sincerely hoped that China and Russia would become our cooperating partners, but those hopes were not fulfilled.

Let us reset the clock and stop forcing battery electric cars into the market. Instead, we should focus on reducing emissions from the cars we can produce without creating a completely new business ecosystem and infrastructure that will be controlled by China. Hybrid vehicles that charge themselves looked like the perfect place to start twenty years ago, and, in my book, it is still the best option we have right now. We learned a hard lesson with 'Dieselgate', which is that if you set unreachable goals, but at the same time make it economically impossible for companies to miss those goals, businesses will cheat. It's either that or go out of business. Passing a law that makes it impossible to sell a car that does not have zero emissions at the tailpipe, turns the car-building business over to those who will pollute the air from their countries, beyond the reach of US and EU courts and totally unresponsive to climate activists.



*If we need one final reason to slow down the BEV train which has left the station and is out of control, it is that cities that have been hijacked by climate activists are doing everything they can to make them ugly once again. This is a street in Stockholm where four charging 'pumps' are in the process of being slammed down right in front of the entrance to a residential building. This is how it looked a century ago when the first gas pumps were put along the curbs, except there was usually just one and it was in front of a hardware store, not people's houses. The concrete and iron barriers are temporary, put there to protect the construction-in-process. What if SHELL had gotten a permit to put their gasoline and diesel pumps in the same place? Would there have been an outcry? You bet. There has not been a word about this in the newspapers.*



*This is what greets residents as they exit their apartment building.*

*The cobalt blue glass enamel rhinestone penguin brooch dates to the 1930's. The brooch has a shimmering quality with the many rhinestones cascading on the front of the penguin.*

13. <https://www.congress.gov/bills/117/congress/house-bill/5376>

14. Jared Golden is the North's version of the South's Joe Manchin. He is strongly non-Progressive, and his formula for getting elected in a district that overwhelmingly voted for the 'former guy' in the past two elections is simple: Make sure everyone knows that, sometimes, you can't stand your party either. In my opinion, if there were more Democrats like Jared Golden, there would be fewer supporters on the other side of the aisle for the former Offender in Chief.

## ***U.S. Inflation Reduction Act (IRA)***

EVERY MAJOR PIECE of legislation passed by democratic governments requires compromise. The ***H.R. 5376 Inflation Reduction Act of 2022*** is no exception.<sup>13</sup> Many (including your Editor) thought it would never be passed, and still others thought it should never be passed. Well, compromises made it more acceptable to the Democratic who were holding it up, namely Kyrsten Sinema of Arizona and Joe Manchin of West Virginia, and it managed to squeak through. Just. Not a single Republican voted for it.

What is *IRA*? It is intended to raise revenue, lower prescription drug costs, fund new energy, climate and health care provisions, and reduce budget deficits. Based on the Congressional Budget Office review of *IRA*, the legislation will reduce budget deficits by \$30 billion through 2031, including over \$100 billion of savings and another \$200 billion of gross revenue from stronger tax compliance. It provides \$369 billion for climate and energy projects, including a tax credit of up to \$7,500 for BEVs that meet the purchasing criteria, which I list later.

*H.R. 5376* was originally introduced as the *Build Back Better Act*. It was President Biden's signature legislative proposal in 2021. It passed in the House on the 19<sup>th</sup> of November 2021 by a vote of 220 yea (yes) versus 213 nay (no). One of the total 221 Democrats, Jared Golden<sup>14</sup> of Maine, voted against it, and all Republicans (212) voted nay. However, after the BBB Bill failed to gain enough support in the Senate to pass, it was replaced in whole with new legislative text in 2022 and named the *Inflation Reduction Act of 2022*. It passed in the Senate on the 7<sup>th</sup> of August 2022 by a vote of 51 yea to 50 nay. All 50 Republican Senators voted against it. The 48 Democratic Senators, the two Independent Senators (Bernie Sanders of Vermont and Angus King of Maine) and the Vice President voted for it.

What convinced Manchin and Sinema to change their minds? Sinema caved after the Democrats drafting the legislation removed a clause closing a venture capital loophole, modified the wording on a 15% minimum corporate tax and provided drought relief funding that benefits Arizona. Manchin was not in favor of subsidies for BEVs. "It



makes no sense to me whatsoever to throw a \$5,000 or \$7,000 or \$12,000 credit to buy an electric vehicle...It's absolutely ludicrous," he said. In the end, the subsidies stayed and he voted yea. It appears that he has decided that if he runs for reelection in 2024, it will be as a Democrat, and he needs the party's support to win the primary.

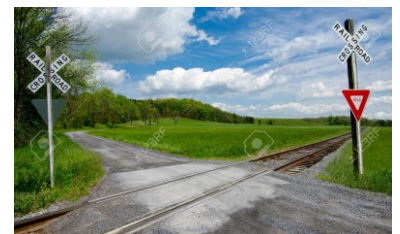
The biggest change in the tax credit rules is where the vehicle has been assembled and where the majority of the battery components come from. In order to receive a credit, the vehicle must be assembled in North America and the "majority" of the battery components and "critical minerals" need to come from North America. As with the former tax rule on BEVs, it is a tax credit in the year you purchase the vehicle. If you don't owe any federal tax, you don't receive a credit, not a point-of-sale rebate. If you owe \$2,000, you receive a \$2,000 credit; if you owe \$10,000, you receive up to \$7,500. There's a tax credit for used BEVs priced below \$25,000. The tax credit will apply to individual filers with adjusted gross incomes of \$150,000 or less, or to joint files with \$300,000 adjusted gross income. Manufacturer caps have been eliminated, so tax credits are once again available for TESLAS and GM vehicles.<sup>15</sup>

### ***Ungated level crossing warning in Sweden***

A LEVEL CROSSING is an intersection where a railway line crosses a road or a walking path at the same level, as opposed to a crossing occurring with an underpass or overpass of one or the other. Other names include railway level crossing, grade crossing, railroad crossing, or train crossing. Ungated level crossings are places where roads meet train tracks without a physical barrier falling across the right-of-way when a train passes. (See top photo in sidebar.) In the EU, just under 47% of all level crossings are ungated, while in the U.S., close to 80% are ungated.

Level crossings, both gated and ungated, are dangerous. Every year, an average of 400 people are killed at level crossings in the EU, where there are a total of 110,000 (2014). In the U.S., the number is 300 killed at 210,000 crossings (2018). This is approximately 30% of the total fatalities involving trains. Collisions at level crossings occur between trains and vehicles as well as pedestrians. Among pedestrians, the oldest and the youngest are those who are overrepresented in fatality statistics. Many of the ungated crossings are in rural areas where a lightly trafficked road leads from a main road to a single farm or a small village. Many level crossings in more built-up areas are on private land and lead to

15. Tesla has put its German battery plant plans on hold in order to focus on ramping up battery production in Austin, TX faster. This is because the new U.S. tax rules require that both the vehicle and its battery are produced in North America.



industrial areas, campgrounds or recreational facilities where cars and trains have a high chance of meeting.

Why aren't all level crossings gated and signaled in such a way that makes it difficult or impossible for cars or pedestrians to be on the tracks when a train passes? It appears that in most countries, it is the road owner or road authority, not the railroad, which has the responsibility for building the barrier. If the road is private, for example connecting a public road to a private location, it is the owner of the private road who must build the gate. If it is a public road, it is the community, country, state or country that controls the road. Barriers are not inexpensive to build. A simple one for a two-lane road with a barrier on each side of the road costs around \$250,000, including the electronics to lower and raise the gates when a train approaches and passes.

Sweden has a total of 9,000 grade crossings, of which 5,200 (58%) that are accessible by the public are ungated. Each year, an average of 15-20 people are killed at all grade crossings in Sweden. Around 60% are considered to be suicides. Ungated level crossings account for the largest number of these fatalities.<sup>16</sup> The Swedish NATIONAL TRAFFIC ADMINISTRATION (TRAFIKVERKET), which has responsibility for both roads and railroads, has decided to try to do something about the problem at ungated level crossings.

Torbjörn Biding, whom many of *THE DISPATCHER*'s readers know as the principal representative for Sweden's public sector among its Intelligent Transport System representatives in the earliest stages of ITS activities, has seen to it that Sweden is now tackling their problem of ungated level crossings. He has been with TRAFIKVERKET in various leadership roles for over thirty years, and he took on the challenge of applying an ITS solution to a problem for which it has been difficult to find the funds to correct through physical interventions. The solution, which still in the prototype stage, is a smartphone application that warns the phone holder that a train is approaching at the crossing where they are located. All trains must have a GNSS, which is not the case today. But it's an important start.

### ***Catching tire particles before they hit the air***

THERE'S A REASON we need to replace the tires on our cars after they have been driven for around 30,000 miles (48,000 kilometers). They wear down so that the thread depths are below the safe minimum of 3-to-4 millimeters. What happens to all the stuff that is used to make those tires and is worn off when we drive our

16. There are 2,400 level crossings in NL, of which 350 are ungated. 125 of the 350 are publicly accessible.

<https://www.trafikverket.se/resa-och-trafik/trafiksakerhet/sakerhet-vid-jarnvag/plankorsningar--korsningar-mellan-vag-och-jarnvag/>

cars? Today, that stuff is 70% synthetic rubber and the rest is carbon black, a fine carbon powder, along with a mixture of chemicals. Well, the rubber, carbon black and chemicals eventually end up in the air that we breathe. According to a group of academic researchers, around 6.1 million metric tons of tire dust end up in our atmosphere and waterways annually. Non-exhaust emissions, which include tire, brake and road surface wear, account for 90% of particulate emissions from vehicles.<sup>17</sup>

This problem will grow larger as more battery electric vehicles are put onto the roads since they are 20-40% heavier than conventional cars due to the weight of their batteries, and their tires are larger in order to carry the extra weight. By 2030, with all the projected BEVs on the roads, non-exhaust emissions are expected to increase by 52.4%. (Ed: You don't hear too much about this little detail.)

A new company in the UK called THE TYRE COLLECTIVE aims to do something about all that tire/tyre dust. It has developed a wheel-mounted device that collects the tiny particles on electrostatically charged copper plates. The new company started as student project when the founders were working on master's degrees in Innovation Design Engineering at Imperial College London and Royal College of Art.

Their device is powered by the car's alternator and uses a copper plate to create an electric field that attracts the particles which have a charge. Inside the device is a plate cleaning apparatus which cleans the plate and puts the particles in a storage canister. The team has not yet figured out how those canisters will be emptied and the contents collected. They do reckon that the dust will be processed and recycled into new products, like, for example, tyres (or tires). ZHERO, a London-based company offering low-emission and sustainable logistics services, is currently conducting a three-month trial with THE TYRE COLLECTIVE device.

### ***Super Glue road terrorists***

WHAT'S MORE IMPORTANT: a single life saved today, or many lives saved at some distant point in the future? A group in Sweden, coached by Extinction Rebellion, has exhibited through its actions that it believes it is worth sacrificing a life today for its cause. On two separate occasions, within days of each other, a dozen-or-so members of the group blocked the main exits leading from the principal motorway into Stockholm in the vicinity of Stockholm's largest hospital. Two ambulances trying to reach the hospital with



17.  
<https://edition.cnn.com/2022/08/16/world/tyre-collective-microplastic-rubber-waste-climate-hnk-spc-intl/index.html>



*My first thought was, "Why are they wearing reflective vests?"*

critically ill patients were unable to get past the blockade because the blockers had glued their hands to the pavement with Super Glue. The police had to wait for solvent to be delivered because if they tried to remove the blockers they could have ripped the skin from their hands, and then they would have been charged for the use of excessive force, lost their jobs, cancelled for life. You know the drill.

Now, I am going to make this personal. On the 1<sup>st</sup> of September, a family member, who is in her early 70s, was in Stockholm for a dentist appointment and to run a few errands. While she was in the middle of a busy crosswalk, she stumbled and broke her arm. An ambulance was called that took her to a hospital where her arm was put in a cast and her cuts and bruises from the fall were attended to. What if it had been more serious than a broken arm, and her ambulance had been delayed by climate activists? Think for a moment how you would feel if this happened to one of your loved ones.

Have a look at Extinction Rebellion's manifesto on their web site.<sup>18</sup> They call it 'Aims', probably understanding that using the term 'manifesto' might conjure up thoughts of other terrorist groups. I think you will see that environmentalism is a cover for something that is much larger, a new world order that will bring about peace, love, equality, prosperity and happiness for all. There are only two problems with this. First, in order to get there, people should die in ambulances. It does not say that directly, but sacrifices are necessary and casualties are justified because their cause is just. Second, the places where all of these benefits will be realized are those countries where the Super Glue road terrorists can act with relative impunity, like in the U.S., Sweden, UK and anywhere where people get to vote for their leaders. In the places where they'd have their butts blown off if they tried their shenanigans, it will be business as usual with the added advantage that these countries will not have to worry about their former foes (U.S., Sweden, UK, etc.) because those countries will be economically neutered as a result of the protests.

What would we find if we could see where funding for these organizations really is coming from? Are we going to see connections to governments that will benefit from the new world order, the same countries that have been fiddling with elections in democracies and helping to get fringe candidates elected who also do their bidding?

18. Extinction Rebellion (abbreviated as XR) is a global environmental movement, with the stated aim of using nonviolent civil disobedience to compel government action to avoid tipping points in the climate system, biodiversity loss, and the risk of social and ecological collapse. Extinction Rebellion was established in the United Kingdom in May 2018 by Gail Bradbrook, Simon Bramwell, and Roger Hallam, along with eight other co-founders from the campaign group Rising Up! Its first major action was to occupy the London Greenpeace offices on 17 October 2018, which was followed by the public launch at the "Declaration of Rebellion" on 31 October 2018 outside the UK Parliament. On November 2018, five bridges across the River Thames in London were blockaded as a protest. In April 2019, Extinction Rebellion occupied five prominent sites in central London: Piccadilly Circus, Oxford Circus, Marble Arch, Waterloo Bridge, and the area around Parliament Square. In

Ten of the super glue terrorists, who range in age from 30 to 70, have been arrested and charged with sabotage and causing harm to others, which could bring a penalty of up to four years in prison. The prosecutor in the case says the action caused over \$250,000 in direct costs. No one expects them to get anything more than a slap on the wrist, and they have vowed to do it again. They claim they are innocent given the climate situation.

There was a national election in Sweden on the 11<sup>th</sup> of September, and even the green party condemned the action publicly, but no one has taken them seriously. One comment on the action was very appropriate: “So, a real life trolley problem. Save one life at the expense of others, or save their lives by not running them over, but lose the patient.”

### **Quick Transactions**

I have brought back the short clips I included in the early version of *THE DISPATCHER*, when it was a six-page newsletter.

#### *Sean Connery’s James Bond car sold*

A SILVER Aston Martin DB5, owned by the estate of Sean Connery (1930-2020), was sold for \$2.4 million in a car auction held in Monterey, California this past August. Auctioneers, Broad Arrow Auctions, had set the value of the car at between \$1.4 and \$1.8 million, but they didn’t count on the level of interest in the car which drove up the price. The buyer wished to remain anonymous. It was in *Goldfinger*, which debuted in 1964, that Bond first drove an Aston Martin DB5. As Bond fans know, that car had very special equipment to evade and defeat the enemy. Connery bought the same model, a ’64, in 2018—without the bad guy-beating accouterments.



#### *Is it There is data, or There are data?*

*Data* is a Latin word. It is the plural form of *datum*, which means ‘something given’. You may be familiar with the word *datum* through its use in geography, cartography, geodesy, and surveying as meaning “a point, line or surface used as a reference”. The most common modern English definition of ‘data’ is “factual information used as a basis for reasoning, discussion, or calculation; information in digital form that can be transmitted or processed”. Merriam-Webster says it is plural in form, but singular or plural in construction.

*THE ECONOMIST*, and most data scientists, have insisted to tell us that “The data are not in”, and anyone who uses ‘data’ in the singular form is simply showing that he is unlearned and not worthy



of taking part in serious discussions. I do not believe I have ever heard anyone say, “The datum is in”, but I wonder how the Data is Plural Police’ would react if someone popped it into a conversation. In any case, *THE ECONOMIST* has now relented. It will allow the singular use of ‘data’ alongside of the plural usage in particular situations:

- When considered as a concept, as in ‘data is the new oil’.
- When the data in question is considered as a mass, as in ‘the data on this mobile-phone plan is insufficient.’

“However,” says The Economist, “when data points are considered as a group of pieces of information, the plural should be used,” as in ‘the data are not in’.

Do I prepare an agenda (Latin plural) or an agendum for a meeting? Does New York City have one baseball stadium or two stadia? If you can substitute ‘a group of pieces of information’ for data, why isn’t it ‘informations’ in the plural form? Sorry, Johnson (in whose column this article appeared), this solves nothing, and I believe that you, or your eventual successor, will be back when all the data is in and the votes are counted, and you will remove ‘data are’ from your style rules.

#### *Digital controls are distracting eyeballs from the road*

*VI BILÄGARE*, a Swedish language magazine for car owners, conducted a test of twelve cars to determine how much extra time it takes to use touch screen controls versus those good, old, traditional knobs that have disappeared in most cars being sold today. There has been plenty of criticism of touch screens, but the magazine wanted to quantify the effects of changing the temperature, changing the radio channel, zeroing the trip computer, and changing the instrument panel brightness. Its staff performed the tests with the car moving at 110 kilometers per hour (66 mph). They measured the distance travelled while the driver’s eyes were removed from the road and focused on the display. In a *Volvo V70*, the control car with totally manual controls, the car travelled 306 meters while the driver’s eyes were on the knobs and not on the road. In an *MG Marvel R*, with everything on the touch screen, the car moved more than four times further without the driver’s eyes, 1,372 meters. The MG was worst, but all of cars with digital controls took the drivers’ eyes from the road for more than twice the time of the manual knobs.



# Musings of a Dispatcher: Classic Hood Ornaments



*The Spirit of Ecstasy on the Rolls-Royce. Lady Emily is the name of the lady whose sculpture is largely hand-made in a small factory near Southampton, England.*

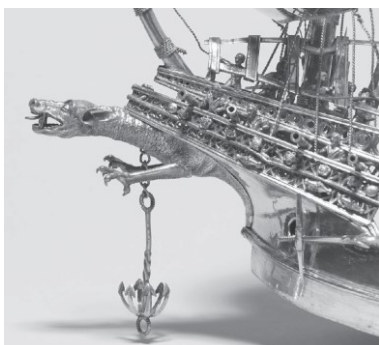
## ***They were always more than decoration***

HUMANS NEED LUCK to survive. We always have. From the time we were able to think, we invented ways to keep ourselves safe before we had to resort to self-defense, and to bring good fortune even when all the forces of nature were working against us. Religions were the stories we invented for how we interacted with nature and how we should communicate our wishes to whomever or whatever was controlling our fate, and the talismans we wore and with which we decorated our dwellings and other possessions were drawn from these stories. *Apotropaic* magic (from Greek *αποτρέπειν* "to ward off") is the term for a type of magic that is intended to turn away harm or evil influences, and includes good luck charms or gestures, such as crossed fingers or knocking on wood.

Rather than hood ornaments on cars and trucks being simply decorative fixtures or fancy versions of radiator caps, I believe we placed these objects on our cars for a much more important reason that traces its roots all the way back to the earliest cave drawings, through carved dung beetle figures over four thousand years ago made by Egyptians,<sup>19</sup> and Viking longboats' bows with dragons or snakes as figureheads fashioned a thousand years ago. These serpentine figureheads were intended to instill fear in the gods of whichever land the Vikings were invading, not the men they would be facing. It is said that Vikings were fearless when fighting other men, but needed help from their own Norse gods against the gods of their enemies.



19. Egyptian Scarab Beetle - ancient Egyptian amulets and other jewelry depict sacred scarab beetles. These beetles are not mythological characters created by ancient Egyptians. They are dung beetles that were considered sacred during the ancient Egyptian period. These beetles were linked to Egyptian Gods, especially *Khepri*, the morning sun. This God was depicted as a man with the head of a scarab beetle.



This tradition of ship's figureheads, or 'maidenheads' as they were later called, continued for another thousand years. The *Griffin* or, as it was sometimes called, *Gribshunden* (griffin hound) was a warship that belonged to the Danish-Norwegian King Hans. The ship sank in 1495 and was one of the largest and most modern warships of its day. In 2015 its figurehead carving (see sidebar) was raised

from the wreck. The *Griffin* is swallowing a man screaming in agony. The monstrous head is an expression of the spirit or character of the vessel, similar to that of the Viking ships, instilling fear in the enemy.

Ships of commerce did not need to instill fear in enemies, but



symbols were used to calm the fears of the crews who put their lives at risk simply by boarding the vessels. Shipbuilders added decorations that were intended to ward off evil spirits and bring luck to the sailors. This is when busts or full figures of a person, often

lovely women called maidenheads, were carved and mounted on the bow of the ship. In the 19th century, as the technology of ships developed from sail and wood to steam and iron, the bowsprit<sup>20</sup> started to disappear and with it the figurehead under which it had traditionally been placed. Figureheads began to go out of favor for other reasons. They were expensive to have carved and added unnecessary weight to the ships. And, as ships and sailing became safer, sailors became less superstitious, so the need for these symbols waned, but did not disappear.

#### *Other dangerous modes of transport needed protecting*

Railroad companies did not adorn the fronts of their iron horses with figureheads, but they did adopt the practice of having mascots. ‘Mascot’ is derived from the French word, *mascotte*, meaning ‘lucky charm’. According to *MERRIAM-WEBSTER*, the term ‘mascot’ in English refers to “a person, animal, or object adopted by a group as a symbolic figure especially to bring them good luck”.

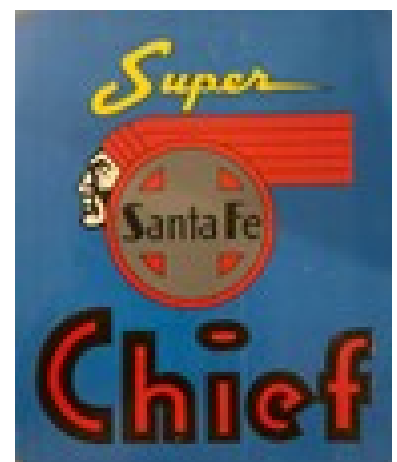
ATCHISON TOPEKA & SANTA FE, known simply as ‘SANTA FE’, chose a



Native American chief as its mascot. More like the Vikings’ symbol, *The Chief* protected passengers on their journeys through the prairies and mountains of the wild American west. *Phoebe Snow* was a fictional character created as a mascot by an advertising

agency for the DELAWARE, LACKAWANNA AND WESTERN RAILROAD, or ‘LACKAWANNA’. *Phoebe Snow* was portrayed as a New York socialite who travelled all in white—hat, dress, shoes, and gloves carrying

20. A spar, extending forward from the stem of a ship, to which the stays of the foremast are fastened.



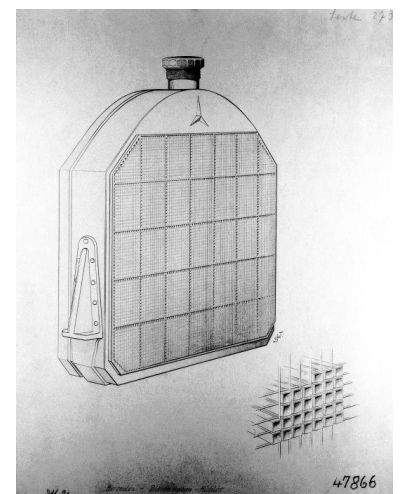
a white purse—between Buffalo and New York on the LACKAWANNA's main line. She did not have to worry about her costume being soiled by soot belching from the steam engine because LACKAWANNA burned clean anthracite coal mined in Northeastern Pennsylvania.

Mascots appeared at the same time as companies began to reinforce their brands with logos. As with the SANTA FE, a logo could incorporate the mascot, or it could be distinctly different. Among the ten oldest logos, only PEUGEOT, today part of STELLANTIS, chose a mascot as a logo. PEUGEOT was founded in 1810 as a steel manufacturer with saws as its specialty, and the lion mascot logo first appeared in 1850. It was initially a lion walking on an arrow, which symbolized the speed, strength, and flexibility of the PEUGEOT saw blades. The arrow disappeared in 1910, but the lion continues on PEUGEOT brand vehicles to this day.

There is no question that driving or riding in motor cars was a very dangerous proposition when they were first introduced. In the U.S., the change in per capita fatalities from the previous year rose between 32% and 69% measured from 1900 when statistics first started to be collected. Fatalities per 100,000 population reached their highest level in 1937, when the number was 29.36. Except for the World War II war years, they stayed above 20 until 1982 when the decline began. In 2021, they were 12.89. Is it any wonder that you still see rosaries hanging from the rear view mirror and plastic statues and religious icons on the instrument panels of cars anywhere in the world?

#### *Radiator caps were the logical place to put the mascot*

A company mascot adorning the hood of a motor car or truck offered a more nondenominational form of good luck, like the frigate's figurehead. The radiator cap provided an extremely handy spot to place the mascot. Wilhelm Maybach, who, with Gottlieb Daimler, founded the DAIMLER-MOTOREN-GESELLSCHAFT (DAIMLER ENGINE COMPANY), invented the first effective car radiator based on the honeycomb concept in 1890. The radiator was a breakthrough in engine cooling, and was first used in 1897 on DMG's first passenger car, the *Phoenix*. The radiator reached its full form in the *Simplex* models starting in 1904 (see sidebar), with the distinctive full-front shape and the prominent radiator cap. Early radiators were water-cooled, and overheated easily as a result of worn out fan belts and leakage. Getting the cap off quickly—but safely—was essential.





So, there it was, a worthy pedestal for a miniature statue of whatever sort the car manufacturer, or the car's owner, desired to place on it. And that is what they did, beginning at the end of the 20<sup>th</sup> century's first decade. Radiator cap-mounted ornaments had their heyday from 1910 until the end of the 1930s, after which



radiators disappeared under the hood and behind the grill. Well-known sculptors were commissioned, mostly by private individuals, to add their special touch to the luxury cars of the day. René Lalique (French, 1860–1945) was the most sought after artist. His frosted glass rendition of the *Cinq Chevaux* (five horses), the first Lalique mascot designed for CITROEN in 1925, was fitted to his own 1925 Citroën 5CV.

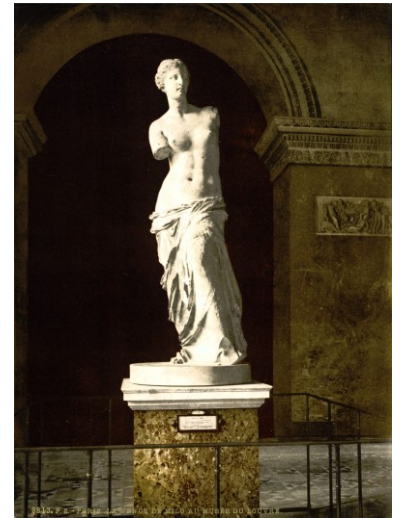
One of my personal favorite radiator cap ornaments is the BUGATTI Dancing Elephant, here shown on a 1926 Bugatti Type 41 Royale,



along with the enameled red oval logo, called "the Macaron", that has symbolized the company since its founding in 1909. The elephant was a tribute to an elephantine sculpture in bronze made by Ettore Bugatti's brother.

ROLLS-ROYCE's iconic *Spirit of Ecstasy*, shown on the lead page of this *Musings*, has, as you might expect, its own very special story. Henry Royce established his electrical and mechanical company, ROYCE LTD, in 1884. In 1904, he built his first motor car. In the same year he met Charles Rolls, whose company, CS ROLLS & Co, sold quality cars in London. The two agreed to establish a company called ROLLS-ROYCE MOTOR CARS, to which ROYCE LTD would supply cars and CS ROLLS & Co would sell them. In 1910, Henry Royce decided that he had had enough of his cars' owners bolting their own egos on his cars, and he asked RR MOTOR CARS' managing director, Claude Goodman Johnson, to commission an ornament that would be placed on all of the company's cars. Johnson chose the artist Charles Robinson Sykes to do the honors.

Sykes worked under the pseudonym "Rilette", and he had created sculptures for an acquaintance of Claude Johnson named Lord Montagu. One sculpture he made was a hood ornament for Lord Montagu's private *Rolls-Royce*, and he used as his model Eleanor Velasco Thornton. She worked as a professional model, exotic dancer and actress, and she had also worked as an administrative



*Venus de Milo on her pedestal at the Louvre in Paris, France*



*The unique hood ornament that Charles Sykes created for Lord Montagu's Rolls-Royces was given the name "The Whisper", and Montagu had them placed on every Rolls-Royce he owned until his death in 1929.*



assistant to Claude Johnson before becoming Lord Montagu's office manager and mistress. Sykes' idea for the *Rolls-Royce* ornament was meant in part to convey that the car traveled so smoothly that a fairy riding on the hood would not be disturbed. From 1911 until 1928, Charles Sykes personally cast every one of *The Spirit of Ecstasy* hood ornaments and signed each one. His daughter took over this task in 1928 and continued with it until the outbreak of WWII in 1939. After the war, the ornaments began to be produced using a wax casting process at a specialist company in Southampton.<sup>21</sup>

#### *When the mascot moved beyond the radiator cap*

My own first memories of hood ornaments are of those that actually sat on the hood, like this one on a 1950 Packard and the one on the 1948 Pontiac. In the case of the Pontiac, the hood ornament both personifies the car and provides it with a design lexicon which is used to style the entire vehicle. I was never fond of the airplane designs. They seemed to be more utilitarian than ornamental, placed in just the right spot to be used as a handle to pull up the hood in order to check the oil level at the filling station.

In 1950, Plymouth closed the circle on the symbol of luck placed on the prow of a ship with its hood ornament in the shape of a Mayflower-inspired ship. All that is missing is an image of a maid-head.



As the automobile era entered the second half of its first century, hood ornaments on most brands began to experience the same decline as their predecessors. Either they disappeared altogether



or they were transformed into badges, holding on to the real estate like an uncaring heir to a vacant lot with no intention of using it or selling it. My 1961 VW Beetle, with its prow slouching toward the pavement, actually turned the hood

21. [https://www.allcarcentral.com/Car\\_Radiator\\_Mascots\\_GW.html](https://www.allcarcentral.com/Car_Radiator_Mascots_GW.html)



*The 1950 Packard with its cormorant (or is it a pelican?) hood ornament perched on the nose of a bottle-nose whale.*



*1948 Pontiac Torpedo Silver Streak with its distinctive Native American bust. The car company was named after the city where it was founded, Pontiac, Michigan, which was named after Chief Pontiac of the Ottawa tribe.*



*1950s Oldsmobile 88 with Jet Plane hood ornament*

ornament into a handle for opening the world's first frunk. What was a sleek fluted chrome trim on the '48 Pontiac became a soulless piece of metal on which a VW logo, a Wolfsburg badge (shown right and just above the handle), and the frunk handle could be bolted.



It wasn't Ralph Nader alone who killed the goose on the hood. Yes, there were many voices raised against hood ornaments. Joan Claybrook (see the [June 2022 issue of THE DISPATCHER](#)) claims that when she became the Administrator of NHTSA in 1977, one of the first things she did was issue a proposal for a ban on hood ornaments. It didn't go well, neither with the industry nor the NHTSA staff. She said she was told that if she pursued it, her career would be in jeopardy.<sup>22</sup> It didn't happen then, and it hasn't happened since, at least not in the U.S. However, there are related safety rules that make any form of protrusion on vehicles problematic. A 2005 safety ruling in the EU made any form of upright hood ornament non-conforming equipment. ROLLS-ROYCE and JAGUAR have circumvented the problem by making their mascots retractable when any force is exerted on it or when the doors are locked. Mercedes-Benz placed their star on a swivel that allows it to bend. Both of these solutions address a problem experienced by all car owners with hood ornaments, especially the expensive ones, namely, theft.

#### *From prominent symbol to museum piece*

When everyday objects start to become rare, collectors' juices start to flow. Some people collect stamps, coins, and baseball cards, others collect old cars (which, when they were new, were what people bought to use). Some people collect things because they just like to look at them and believe that they should be preserved for future generations, and others collect things because they are rare and will increase in value. When hood ornaments were no longer being placed on hoods, collectors of both types appeared.

One of the former types of collectors who loved everything to do with cars, especially hood ornaments, was Marvin M. Tamaroff. He passed away in 2021 at the age of 95 after a long life in which automobiles played a central role. He was born in Detroit in 1925, and when he graduated from high school he became part of the Allied Forces fighting in World War II. When he returned home, he enrolled in the GENERAL MOTORS INSTITUTE, now KETTERING UNIVERSITY, and graduated in 1949 with a degree in mechanical engineering. He worked briefly for DETROIT DIESEL and then decided to enter the car

22.

<https://usa.streetsblog.org/2020/10/16/the-auto-industry-went-beserk-five-questions-with-joan-claybrook-former-head-of-nhtsa/>



*Hiding the Spirit of Ecstasy*

sales business. By 1969 he had done very well in the used car business and opened his first new car dealership. He was first among dealers who were authorized to sell multiple brands. Marvin's financial success allowed him to begin collecting classic cars, then racing trophies and finally automobile mascots and hood ornaments.

I spoke with one of Marvin's grandsons, Eric Frehsée, President of TAMAROFF MOTORS, INC., who, together with his cousin, Jason T. Tamaroff, bought and now run the family business. My contact with Eric started with a note I sent to Sheldon Sandler, founder and CEO of BEL AIR PARTNERS asking him if he had any information on classic hood ornaments. He sent my note on to Steven Greenfield, CEO/Founder of AUTOMOTIVE VENTURES LLC, who introduced me to Marvin and Jason. Eric told me that his grandfather had around 3,000 hood ornaments at one point. Bronze and glass models were his favorites. He sold a third of his collection to collector in Texas, and donated another third to the GILMORE CAR MUSEUM, North America's largest auto museum with over 400 vehicles on display and over 190,000 square feet of exhibit space. It sits on a 90-acre campus just north of Kalamazoo, Michigan.<sup>23</sup>

The full collection can be seen on the Museum's [Mascot Viewer](#).

### To everything there is a season

Viking ships with their dragon prows faded when the Scandinavian men and women who formed the bands of marauders known as Vikings decided to settle down at the beginning of the 12<sup>th</sup> century A.D. Figureheads disappeared when wooden sailing ships were replaced by iron steamships. Prominent radiator caps were eventually hidden under the hood, and ornaments that continued to have a prominent place on the front of the car eventually lost their purpose and their attraction to car owners. They were also too easy to steal, causing damage to the hood in the process. They were too much of a threat to human life if the car struck a pedestrian just right. The hood ornament is now appreciated as a work of art, a prized sculpture that can be displayed in a cabinet, window sill, or mantelpiece. For those who were alive when hood ornaments were common, they can recall fond memories; for others, they are simply a piece of automobile memorabilia. Happily, many of them were saved from the scrap press and the melting ovens so we can still see them on display today and in the future.



23. The GILMORE CAR MUSEUM started in the early 1960s when Donald S. Gilmore began collecting vintage automobiles. Some of the first vehicles in his collection included a 1927 Ford Model T, a 1913 Rolls-Royce, and a 1920 Pierce Arrow. Restoring that classic Pierce Arrow at his home on nearby Gull Lake ignited a passion. Over the years that followed Donald continued collecting some of the world's most renowned automobiles.

To accommodate his collection he acquired 90 acres of land in southwestern Michigan in a small town known as Hickory Corners. It was his wife Genevieve who had the idea of turning the collection into a museum, providing future generations access to Donald's one-of-a-kind collection. They established a non-profit foundation and opened the museum to the public for the first time on Sunday, July 31, 1966.

Today, the GILMORE CAR MUSEUM is North America's largest auto museum with over 400 vehicles on display and over 190,000 square feet of exhibit space. The Museum's 90-acre Historic Campus features numerous vintage structures including a restored and fully-functioning 1941 Silk City Diner, a recreated 1930s Shell Station, six onsite Partner Museums, and so much more.

<https://gilmorecar-museum.org/about/history-and-mission>

*The Egyptian Scarab Beetle is a dung beetle. After finding dung, the beetle forms it into a ball and rolls it, following a straight line despite all obstacles. It hides it and then starts its dung quest again. When it is hungry, it can find its stash, each and every one of them. Like all good navigators, it follows its nose.*

## ***About Michael L. Sena***

Through my writing, speaking and client work, I have attempted to bring clarity to an often opaque world of highly automated and connected vehicles. I have not just studied the technologies and analyzed the services. I have developed and implemented them, and have worked to shape visions and followed through to delivering them. What drives me—why do what I do—is my 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. Most importantly, I put vehicles into their context. It's not just roads; it's communities, large and small. Vehicles are tools, and people use these tools to make their lives and the lives of their family members easier, more enjoyable and safer. Businesses and services use these tools to deliver what people need. Transport is intertwined with the environment in which it operates, and the two must be developed in concert.



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