



**Electric Vehicles;  
The future is now!**

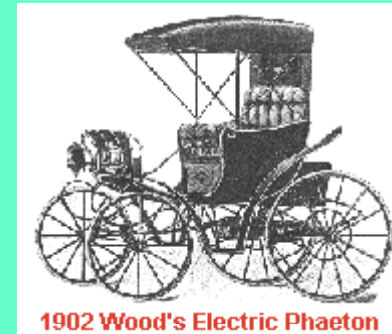
# Henri (Hank) J. Buettner

- Owner, Buettner Telecom Consulting and Training
- Co-Builder of the Crazy Horse Pinto Electric Dragster



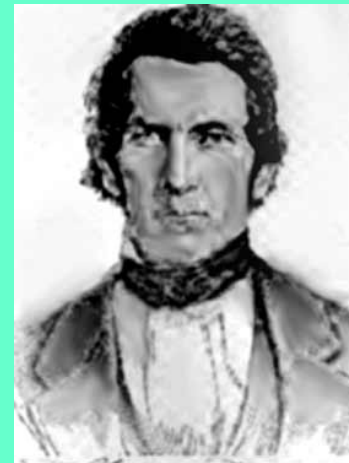
# Presentation Overview

- History of Electric Vehicles
- Electric Vehicle Types
- Technologies Used
- Current vehicles on the market in Alaska
- EV's on market or soon to be released in the US not Available in Alaska now
- Neighborhood Electric Vehicle (NEV)
- Choosing the right Vehicle

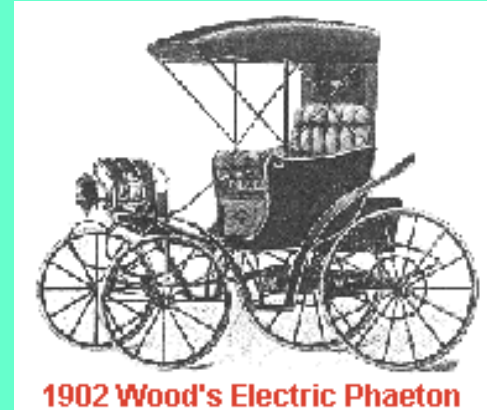


# History of Electric Vehicles; 176+ years old

- 1830's to 1880
- Robert Anderson  
(Scotland) First EV
- Professor Stratingh  
(Holland), Electric  
Carriage (Upper Right  
Photos)
- Thomas Davenport  
(USA), First practical EV.  
(Bottom Right Photo)



- 1880 to 1910
- Three competing technologies, Gas, Steam and Electric
- Electric was preferred
- Both Electric and Hybrid Electric Vehicles were available.
- Roads were limited.



- 1910 to 1920
- Electric Starter invented in 1912
- Ford Model T less than half the cost of an EV
- In 1913 6000 EV's sold, 182,809 Model T's
- By 1920 EV production was ended



- 1920 to 1965 No commercial vehicles were sold
- 1965 to 1980 Auto makers started experimenting with EV's due to Air Pollution



1975 Electric Postal Vehicle



1971 Battronic Truck

- 1980 to 1990 Little progression was made with EV's until 1988 when GM funded the effort that lead to the EV1



**GM EV1**

- 1990 to 2000 The 1990's started out slow.
- 1997 Toyota Releases the Prius in Japan
- US sees small selection of EV's appear including the EV1 and the RAV4 EV.
- 1999 the Honda Insight Hybrid enters market



Toyota RAV4



- 2000 to Present have been mixed years.
- Several new NEV companies started
- Toyota releases the Prius to the US market
- 2005 sees the end of the line for the EV1 and the other vehicles introduced in the 97-99 time period.
- 2008 Tesla releases the Tesla Roadster
- By 2010 the big auto makers reversed course and again have introduced Various forms of EV's to the market.
- Today, not including NEV's, there are over 25 vehicles available in the US with more coming soon.



# Electric Vehicle Types

- Plug-in Electric Vehicle (PEV)
- Hybrid Electric Vehicle (HEV)
- Plug-in Hybrid Electric Vehicle (PHEV)
- Neighborhood Electric Vehicle (NEV)
- Electric Dragsters; Home Built, Fast, Fun, not cheap



# Technologies Used

- Drive Systems
- Batteries
- Charging systems

# Current EV's Marketed in Alaska

- Chevrolet Tahoe Hybrid



- Ford Escape Hybrid and Ford Fusion Hybrid



# Current EV's Marketed in Alaska

- Lexus HS, RX an CT Hybrid Models



# Current EV's Marketed in Alaska

- Toyota Prius II, Camry, and Highlander



# Current EV's Marketed Outside Alaska

- Chevrolet Silverado Hybrid Pickup
- Cadillac Escalade Hybrid
- GMC Yukon Hybrid
- GMC Sierra Hybrid Pickup
- Lexus GS and LS Models
- Nissan Leaf
- Kia Optima
- Lincoln MKZ Hybrid
- Infiniti M Hybrid
- Hyundai Sonata Hybrid
- Porsche Cayenne Hybrid, (yes it is fast)

# Neighborhood Electric Vehicles NEV's

- Please refer to the web site <http://nevportal.com/> for manufactures of NEV's
- Extremely limited use in Alaska



# Choosing the right Vehicle

- Assess your actual driving habits
- Calculate your actual fuel and maintenance costs
- Make comparisons of vehicles that may fit your need.
- Be a smart buyer

# Summary

- No one size fits all
- We are moving in the right direction.
- We do not have to wait until “2000” it is already behind us

**THE FUTURE IS NOW**