

Influential Cars of the 20th Century III

Jim Rauf

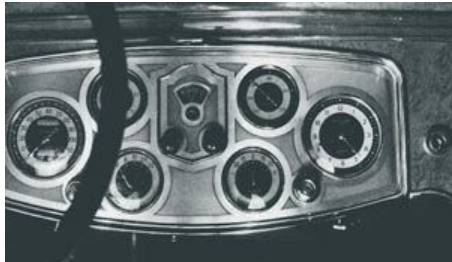
Influential Cars of the 20th Century

- **1932 Ford** introduces the V8 engine
 - Eight cylinders for low price car
- **Packard** luxury **Twin Six**
 - Twelve cylinders for high price car
- **National Highway User Conference (Alford Sloan)** lobbies government promoting highway construction
- **1933 Veed Root** computer meter for gasoline pumps-sell by dollars rather than gallons
- **Tobata Casting** and **Nihonirst** form **Motor Vehicle Manufacturing Co (Nissan)** to manufacture **Datsun** cars
- First drive in movie in New Jersey
- **Kiichiro Toyoda Co** begins motor vehicle division
- **“Neal Deal”** sponsors road construction



Influential Cars of the 20th Century

- **1934 Chrysler** debuts streamlined styling with its **Chrysler** and **Desoto** eight cylinder **Airflow** models-they do not sell well
- Most cars have independent front suspensions
- **Cadillac** offers a high output generator and voltage regulator
- **Chrysler** offers automatic overdrive transmission
- Radio controls are built into dash boards



Packard's installation

- Independently sprung front wheels are on all **GM** cars and on the **Plymouth** and **De Soto**
- They are also optional equipment on **Hudson** and **Terraplane**



Chrysler Airflow



Buick front suspension

Influential Cars of the 20th Century-Automatic Transmissions

- The first automatic was invented in **1904** by the **Sturtevant** brothers of Boston
- It had two forward gear ratios and engine-driven flyweights which controlled the gear selection
- At higher engine speeds, high gear was engaged
- As engine RPM decreased, the gearbox would shift back to low
- The transmission was prone to sudden failure, due to being unable to withstand forces from the abrupt gear changes.



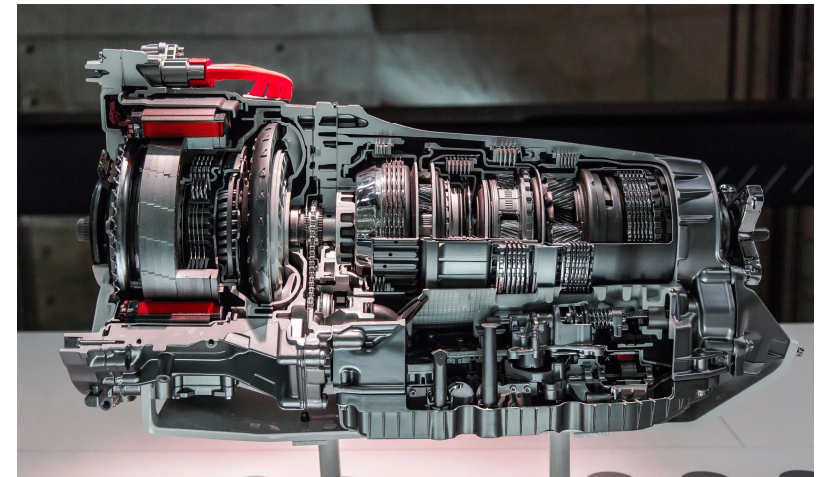
Influential Cars of the 20th Century-Automatic Transmissions

- **1934 REO** introduces REO Self-Shifter automatic transmission
- It was actually two transmissions connected in series
- For ordinary driving, one unit upshifted itself automatically in relation to car speed through the engagement of a centrifugal multiple-disc clutch
 - Similar to idea used by the **Sturtevants**
- The second transmission was shifted manually and was used only when a lower gear was needed



Influential Cars of the 20th Century—Drive Trains Automatic Transmissions

- **1940 Oldsmobile** introduced the **Hydra-Matic** transmission
- Its built-in control system combined balanced hydraulic pressures dependent on car speed, engine speed and the demands of the driver expressed through the accelerator pedal
- The initial **Hydra-Matic** control system was complex, its weight was excessive and its power losses were considerable
- These problems were overcome and **Hydra-Matic** became a national institution in the American cars
-



Influential Cars of the 20th Century—Automatic Transmissions

- The **Hydra-Matic** automatic transmission consisted of three planetary gearsets that were operated hydraulically
- A fluid coupling was used to connect the engine and transmission
- Credit for perfecting the fluid coupling goes to **Chrysler**, which developed the concept in 1937
- **Chrysler** did not make use of it until 1941, when the **Chrysler Fluid Drive** transmission was introduced
- This was not an automatic unit, but a standard transmission with a fluid coupling, not a clutch
- By 1948, the automatic transmission had evolved into the **hydraulic torque converter** that we know today coupled to a planetary geartrain
- **Buick** was the first to use the torque converter
- **1948 Buick** offered the **Dynaflow** fully automatic transmission as a \$244 option on the **Roadmaster**
- Within three years, 85 percent of **Buicks** had the **Dynaflow**
- Other manufactures soon followed with similar units -- **Chevrolet Powerglide**, **Fordomatic** and **Merc-O-Matic** in 1950; and the **Chrysler M-6 Torque Converter Automatic** in 1951
- The automatic transmission further reduced the difficulty (and skill required?) in driving an automobile

Influential Cars of the 20th Century-Automatic Transmissions

**SPARKLING WITH
NEW IDEAS**
in Comfort... Safety... Style!



FOAM-RUBBER CUSHIONS* SEALED-BEAM HEADLAMPS HI-TEST SAFETY PLATE GLASS WING-TYPE FENDER DESIGN



**ONLY CAR OFFERING
HYDRA-MATIC
DRIVE!**
Optional on select cars and on all Hydra-Matic models.

YOU find the new things first in Oldsmobile. And that's true this year more than ever! Look at the style! You'll find youth and smartness in every line—new individuality from every viewpoint. Look for Comfort! Oldsmobile gives you the exclusive Rhythmic Ride, with modern coil springs all around. Olds offers Foam-Rubber cushions*—developed for airplanes and extra-fast trains. Look for Safety! Olds gives you such brand new developments as Hi-Test Safety Plate Glass and Sealed-Beam headlamps. Look for Performance. You'll find fluid and dash—smoothness and stability—plus handling ease that makes it a joy to drive. Take a spin in an Olds today. Learn what a world of difference new ideas make!

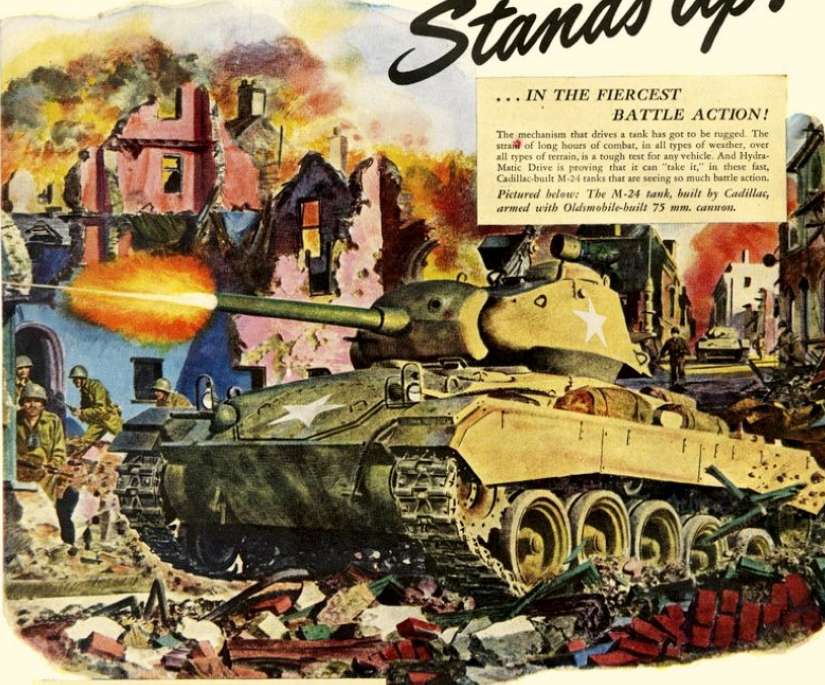
PRICED FOR EVERYBODY. Car illustrated: Sixty 4-Door Touring Sedan \$906, including white side-wall tires. Delivered at Lansing, Michigan. Other models: Coupe \$917 and up; Sedan \$833 and up. *Foam-Rubber cushions—optional at extra cost on Sixty and Seventy, standard on Custom 8 Coupe. Transportation based on real rates, state and local taxes (if any), optional equipment and accessories—extra. Price subject to change without notice. A General Motors Value.

Bigger and Better in Everything!
OLDSMOBILE "BEST LOOKING CAR ON THE ROAD!"

HYDRA-MATIC
Stands Up!

**... IN THE FIERCEST
BATTLE ACTION!**

The mechanism that drives a tank has got to be rugged. The strain of long hours of combat, in all types of weather, over all types of terrain, is a tough test for any vehicle. And Hydra-Matic Drive is proving that it can "take it," in these fast, Cadillac-built M-24 tanks that are seeing so much battle action. Pictured below: The M-24 tank, built by Cadillac, armed with Oldsmobile-built 75 mm. cannon.



**... IN THE TOUGHEST
WARTIME DRIVING!**



OLDSMOBILE introduced Hydra-Matic Drive to the motoring public in the fall of 1939... more than five years ago. By the time war broke out, Hydra-Matic had already proved its worth through millions of miles of driving by nearly two hundred thousand Oldsmobile owners. It wasn't surprising, then, that one of the tanks sent into action by the Army was the Cadillac-built M-24, equipped with a Hydra-Matic transmission. Hydra-Matic for extra maneuverability! Hydra-Matic for ease of control! And, on battle fronts all over the world, these speedy tanks have shown that it's Hydra-Matic for durability, too!

On the home front, Hydra-Matic Drive has been establishing another impressive war record. In the hands of thousands of essential drivers, Hydra-Matic Oldsmobiles have been meeting all the toughest wartime tests of time and mileage... saving gasoline... saving energy for war-busy owners by eliminating clutch-pushing and gear-shifting... providing dependable, economical transportation just when America needs it most!

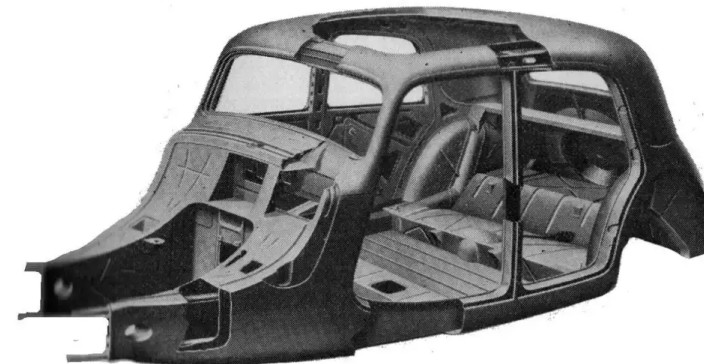
Buy Bonds... to Keep 'em Fighting!
OLDSMOBILE DIVISION OF **GENERAL MOTORS**

Influential Cars of the 20th Century- Unibody Construction

- **1934 Citroen Traction Avant**
- First production **unibody** vehicle
- First successful production **front wheel drive** vehicle
- The unibody method of construction required less material than building a separate frame and chassis
- It allowed for lighter vehicles to be developed, which consequently delivered benefits in fuel economy, handling and ride comfort-increased torsional stiffness
- Changes in the structure of the car can require substantial modification to the underlying engineering of the vehicle
- Most current automobiles use unit construction



Produced 1934 to 1957



Influential Cars of the 20th Century- Front Wheel Drive

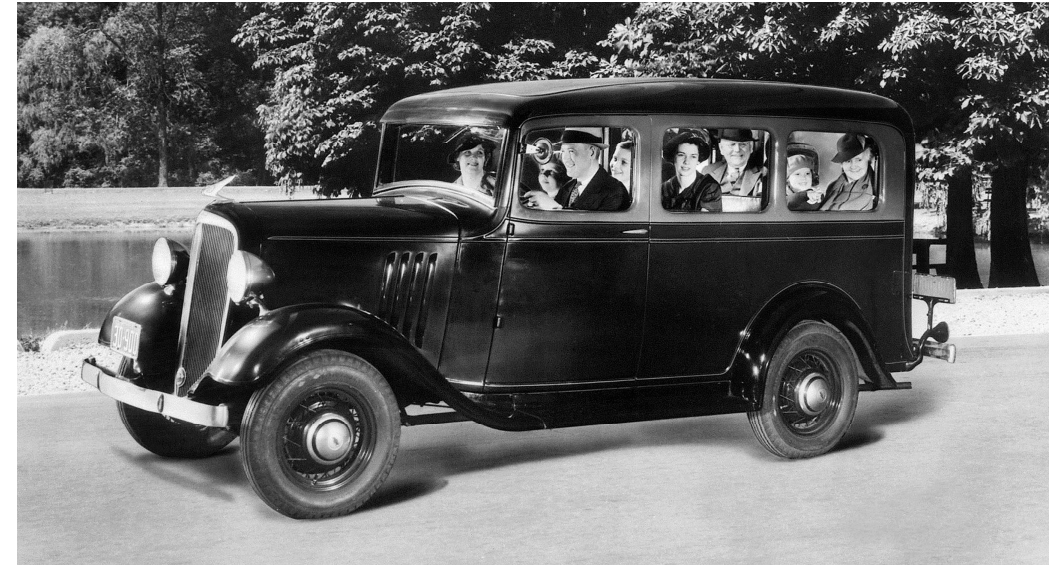
- The **1929 Cord L29** was the first American front wheel drive car
 - It was not produced after 1932
- Early large FWD cars ,without power steering, were hard to steer at low speeds
- It as not until later in the 20 th century that FWD became popular in mass market cars
- Initially for smaller , lighter cars , and then for larger heavier cars
- More compact drive train packaging allows better passenger space
- Most “high line” cars have more gone to all wheel drive rather than FWD



1929 Cord L29

1935 Influential Cars of the 20th Century

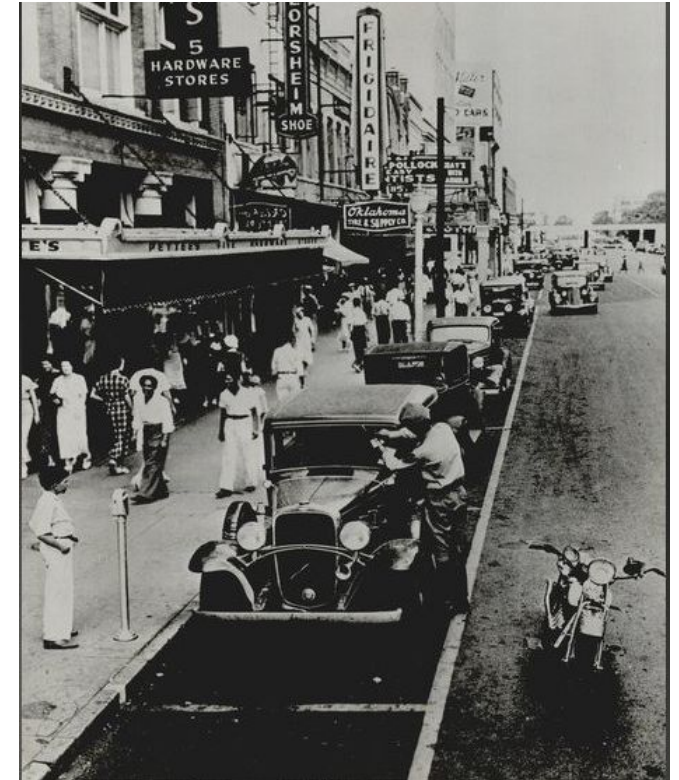
- **GM's Chevrolet** introduces the first all steel station wagon built on a panel truck chassis
- Michigan auto workers form the **United Auto Workers (UAW)** union
- In the U.S. there is one car for each person five persons
- **Toyoda** introduces its first car the **A1**
- Federal government spend 10 times more on roads than on mass transit



- The **1935 Carryall** was used for work and for passengers, and it was a revolutionary vehicle when it debuted

Influential Cars of the 20th Century

- **1935** auto workers in Michigan form the United Auto Workers (UAW) union
- Federal government **Works Projects Administration (WPA)** spend 10 times more money on road construction than on mass transit
- Oklahoma City is first American city to introduce parking meters
- The U.S. has one car for each five people
- **Toyota's** first car the **A1**



Influential Cars of the 20th Century

- **1936 GM** introduces “knee action” independent front suspension on all **Chevrolet** models



- **Ford** and **GM** share ~90% of the Japanese car market
- **GM**, **Standard Oil** and **Firestone** form **National City Lines** to “motorize” mass transit
 - Goal is to replace electric street cars with busses
- **Chrysler’s** 25% market share passes **Ford’s** 22% with **GM** having 43%



- **Ford’s Lincoln** releases the **Zephyr** with “aerodynamic” styling

Influential Cars of the 20th Century

- **1936 Toyota Model AA** debuts
- A total of 1,404 **AA** sedans was produced from 1936 until 1943, when the model was replaced by the more austere **AC**
- It was a fully enclosed 4 door sedan that largely copied the design of the **Chrysler Airflow** sedan
- It had a metal body on a metal ladder chassis
- The metal body was of modern construction
- The rear doors open backwards
- The front glass spanned the entire width of the body

AA



AC

Toyota	AA
Production	1936–1943
Assembly	Japan
Predecessor	A1
Successor	AC
Class	medium size family car
Body style(s)	sedan (AA), cabriolet (AB)
Layout	front-engine, rear-wheel drive
Platform	ladder chassis
Engine(s)	Type A
Transmission(s)	3 speed floor shift manual
Wheelbase	2,851 mm (112.2 in)
Length	4,737 mm (186.5 in)
Width	1,734 mm (68.3 in)
Height	1,737 mm (68.4 in)
Curb weight	1,500 kg (3,306.9 lb)

Influential Cars of the 20th Century

- **1936 UAW** strikes **GM**
- **GM** signs the first auto manufacturers' contract with the **UAW**
- Many cars move the hand brake from the center to the left side of the driver's seat
 - More room in front for passengers
- 54% of U.S. families have a car
- Defrosters debut on several models
- Manufacturers emphasize comfort and "beauty"
 - Accommodation
 - Ride
 - Styling
- **1937 Toyoda** changes the company name to **Toyota**
- **GM** and **Chrysler** recognize the **UAW**
 - But not **Ford**
- The **Automobile Safety Foundation** lobbies the government for highways
- **Buick** executes a model change over in 10 days
- Column mounted gear shifts begin to replace floor shifts
- **Chrysler** introduces front seats that can be adjusted up and down as well as forward and back
- **Studebaker** introduces windshield washers

Influential Cars of the 20th Century

- **1938 Nash** introduces its “conditioned air system”
- **GM** adds a radio option on **Buicks**
- **GM** introduces the first “**concept car**”, the “**Y Job**”
 - Styled by **Harley Earl**
 - The car features :
 - Hidden headlights
 - Power operated windows
 - A power operated convertible top
 - Power operated door locks
 - Power steering
- **Chevrolet** introduces a vacuum operated shift
- **Chrysler** introduces the fluid coupling transmission

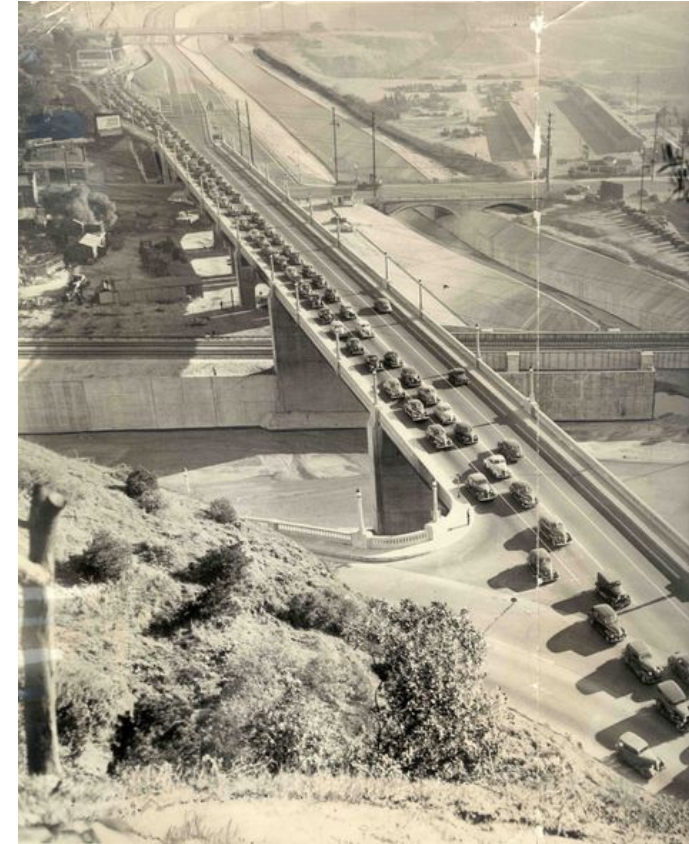


Influential Cars of the 20th Century

- **1939 Nash** adds a thermostat to its “Weather Eye” air conditioning system –the first heating and cooling system in a mass market car
- **Ford** introduces the medium price **Mercury**
 - All **Mercuries** are V8 powered



- California approves plans for a “freeway” system in the Los Angeles area
- The Pasadena freeway opens in 1940



Influential Cars of the 20th Century-Crosley

- **Powell Crosley** releases his **Crosley** car
- It is the first “compact car” built in the U.S.
- The firm was active from 1939 to 1952, interrupted by World War II production
- The station wagons were the most popular model, but also offered were sedans, pickups, convertibles, a sports car, and even a tiny jeep-like vehicle
- For export, the cars were badged **Crosmobile**.



Influential Cars of the 20th Century-Crosley

- **Crosley** introduced several "firsts"
- The first affordable, mass-market car with an overhead camshaft engine in 1946
- The first use of the term 'Sport(s-) Utility' in 1947, for a 1948 model year convertible wagon
- The first American car to be fitted with 4-wheel caliper type disk brakes
- America's first post-war sports car, the 1949 **Hotshot**



Influential Cars of the 20th Century-Crosley



CROSELY PICK-UP

Full quarter ton capacity. Drop tail gate. Roomy, comfortable cab. Amazingly economical. Cuts operating and delivery costs. Perfect for all service men, farms, city and country places.



CROSELY PANEL DELIVERY

Want to save money on light deliveries? Grocers, druggists, dry cleaners—appliance, hardware and other service stores report sensationally low operating costs. Plenty of space for your advertisement on the sides.



CROSELY SPORTS-UTILITY

A truly amazing value! Newest, and lowest priced of all Crosleys. Rear seat is available. Quarter-ton capacity for utility use. Fabric top and sides go on snug and tight in "no time."



CROSELY STATION WAGON

Seats four with plenty of luggage space. Rear seat removable. Entire rear end opens for easy loading. All steel—no wood to rot, swell, shrink or rattle.



CROSELY CONVERTIBLE

Smartest thing on wheels! Carries four husky passengers plus baggage. Easy to manage laminated top snaps into place in a jiffy.



CROSELY SEDAN

Needs no introduction. Thousands already on the road. Constantly improved in both beauty and performance. Styled with an "aircraft flavor." Four passenger. For all around use.



Tom McChill, MI's auto expert, puts the new Crosley through its automotive paces.

EVER since I started on MI's automobile test series in 1946 hundreds of letters have come in asking about the Crosley and other miniature pieces of transportation. So here is the dope on the Crosley. To get it I came to Florida, where they seem to be the most popular—and here I am writing this in Palm Beach.

McChill standing up in convertible. Window casements and frame are not removable.



Influential Cars of the 20th Century- America's First Unibody Car

- **1941 Nash 600** is a first model year example of the US auto industry's first mass-produced unibody car



Influential Cars of the 20th Century

- **1941** after a strike at **Ford's River Rouge Plant** Ford recognizes the **UAW**
 - Last of the “Big Three” to do so
- **Chrysler** introduces the **Town & Country** 4-door 8-passenger station wagon it is the first the first “**Woodie**” with an all-steel roof
- It used the roof of the current **Chrysler Imperial** 4-door 8-passenger limousine
- Th car had “Barrel Back” doors that opened out from the center beneath the fixed rear window



Influential Cars of the 20th Century

- **1941 Packard** offers power windows
- **Cadillac** offers **Hydra Matic** automatic transmission
- **Chrysler** offers **Fluid Drive** on **Dodge**, **DeSoto** and **Chrysler** cars
- **Buick** debuts the dual compound carburetor
 - Actuated by depressing accelerator pedal
 - Permits increased power:
 - Smaller engine 107 hp to 125 hp
 - Larger engine 141 hp to 165 hp
- Early entry into the “horsepower Race”?



1941 Buick



Influential Cars of the 20th Century -Jeep

- **1941 Willys** began production of the **Jeep** for the Army
- **Willys ,Ford and American Bantam** had submitted proposals to the Army for vehicle that was to become the **Jeep**
- The **Willys** design was selected
- Both **Willys** and **Ford** manufactured Jeeps from 1941 to 1945



Weight	2,453 lb curb
Length	132+1/4 in
Width	62 in
Height	overall, top up: 69+3/4 in
Passengers	3 to 4
Engine	134 cu in Inline 4 Willys L134 "Go Devil"
Power	60 hp
Payload capacity	1,200 lb
No. built	WW II total: 647,925 Willys MB : 359,489 Ford GPW : 277,896
Transmission	3 speed x 2 range transfer case
Suspension	Live axles on leaf springs front and rear
Ground clearance	8+3/4 in
Fuel capacity	15 US gal
Range	300 mi
Maximum speed	65 mph



Influential Cars of the 20th Century--Jeep

- The **Jeep** was an all- purpose vehicle during World War II-used in all theaters of the war and in the subsequent conflict in Korea
- It was the basis for civilian **Jeeps** and various derivative **Willlys** vehicles up to the present day
- Including arguably the first **SUV**



Influential Cars of the 20th Century- U.S. Auto Industry Military Production

- Chrysler
 - Aircraft engines
 - Ammunition
 - Aircraft sections
 - M3/M4/M26 Tanks
 - Marine engines
 - Tank engines
 - Trucks
- Ford
 - B-24 bombers
 - Tank engines
 - GE Turbosuperchargers
 - Tanks
 - P&W R-2800 engines
 - Trucks
 - Jeeps
- Willys
 - Jeeps
- General Motors
 - P&W engines
 - Airplanes
 - Cannons
 - Machine guns
 - Rifles
 - Munitions
- Hudson
 - Aircraft components
 - Engine components
- Nash
 - P&W engines
- Packard
 - RR Merlin engines
- Studebaker
 - Trucks
 - P&W and Wright engines

Influential Cars of the 20th Century

- Automobile design and styling progressed from 1932 to 1942
- World War II interrupted all progress for the auto industries around the world
- Car styling changed from being boxy to streamlined
- Engines became more powerful
- Brakes improved automatic transmissions entered the market
- Manufacturers emphasized styling and driver and passenger comfort
- Weaker manufacturers , especially the luxury car manufacturers were felled by the Great Depression
- American auto industry moved to solidify dominance of the “big three”
- All the manufacturers stepped up to provide military equipment to support the war effort
- They would “come back” after the war to satisfy a huge civilian demand