

article discussion edit this page history

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# Chrysler Turbine Car

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**Chrysler Turbine Cars** were **automobiles** powered by **gas turbine** engines that the **Chrysler Corporation** assembled in a small plant in **Detroit, Michigan** in 1963, for use in the only consumer test of gas turbine-powered cars. It was the high point of Chrysler's decades-long project to build a practical turbine-powered car.

**Contents** [hide]

- 1 Engine
- 2 Design
- 3 Legacy
- 4 References
- 5 External links

## Engine

[edit]

The fourth-generation **Chrysler turbine engine** ran at up to 60,000 rpm could use **diesel fuel**, **unleaded gasoline**, **kerosene**, **JP-4 jet fuel**, and even **vegetable oil**. The engine would run on virtually anything and the president of Mexico tested this theory by running one of the first cars-- successfully--on tequila. No adjustments were needed to switch from one to another.

The engine had a fifth as many moving parts as a piston unit (60 rather than 300). The turbine was spinning on simple sleeve **bearings** for vibration-free running. Its simplicity offered the potential for long life, and because no combustion contaminants enter engine oil, no oil changes were considered necessary. The 1963 Turbine's engine generated 130 brake horsepower (97 kW) and an instant 425 pound-feet (576 N·m) of torque at stall speed, making it good for 0-60 mph in 12 seconds at an ambient temperature of 85 °F (29 °C) - it would sprint quicker if the air was cooler and more dense.

The absence of a distributor and points, the solitary start-up spark plug and the lack of coolant eased maintenance, while the exhaust did not contain **carbon monoxide** (CO), unburned **carbon**, or raw **hydrocarbons**. Nevertheless, the turbine generated **nitrogen oxides** (NO) and the challenge of limiting them helped to kill the program.

Its power turbine was connected, without a **torque converter**, through a gear reduction unit to an otherwise ordinary **TorqueFlite automatic transmission**. The flow of the combustion gases between the gas generator and free power turbine provided the same functionality as a torque converter but without using a conventional liquid medium. Twin **rotating recuperators** transferred exhaust heat to the inlet air, greatly improving fuel economy. Varying stator blades prevented excessive top end speeds, and provided engine braking on deceleration. Throttle lag, high fuel consumption — 17 mpg (U.S.) (13.8 l/100 km) — and exhaust gas temperatures at idle plagued early models. Chrysler was able to remedy or mitigate most of these drawbacks and deficiencies.

Unfortunately, the turbine car had some operational drawbacks. The car sounded like a giant **vacuum cleaner**, which was not satisfying to consumers who were more comfortable with the sound of a large **American V8**. High altitudes also caused problems for the combined starter-generator. Failing to follow the correct start-up procedure could wreck the engine in seconds. However, troubles were remarkably few for such a bold experiment. More than 1.1 million test miles were accumulated by the 50 cars given to the public, and operational downtime stood at only 4%.

## Design

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The bodies and interiors were crafted by **Ghia** in **Italy**. As each body was finished and shipped to **Detroit**, Chrysler employees installed **gas turbine** engines, transmissions, and electrical components to prepare the cars for use by the 203 motorists - 20 of them women - who were chosen to test them.

The Turbine Car was a two-door hardtop **coupe** with four individual **bucket seats**, **power steering**, power brakes and power windows. Its most prominent design features were two large horizontal taillights and nozzles (back-up lights) mounted inside a very heavy **chrome** sculptured bumper. Up front, the single headlamps were mounted in **chrome nacelles** with a turbine styling theme, creating a striking appearance. This theme was carried through to the **center console** and the **hubcaps**. Even the tires were specially made with small turbine vanes molded into the **white sidewalls**. It was finished in "Frostfire Metallic", later called "Turbine Bronze" and available on production automobiles. The roof was covered in black **vinyl**, and the interior featured bronze-colored "English calfskin" **leather** upholstery with plush-cut pile bronze-colored carpet.

The dashboard was lighted with **electroluminescent** panels in the gauge pods and on a call-out strip across the dash. This system did not use bulbs; instead, an **inverter** and **transformer** raised the **battery voltage** to over 100 volts AC and passed that high **voltage** through special **plastic** layers, causing the gauges to glow with a blue-green light.

The car itself was designed in the Chrysler studios under the direction of **Elwood Engel**, who had worked for the **Ford Motor Company** before his move to Chrysler. The designer credited with the actual look of the car was Charles Mashigon, who designed a two-seat show car called the Typhoon<sup>[1]</sup>, which was displayed at the 1964 **World's Fair in New York City**. Engle used many older Ford styling themes. The rear taillight/bumper assembly was copied directly (with revisions) from a 1956 Ford styling study called the "Galaxia". He used none of the themes associated with his 1964 **Imperial**.

## Legacy

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A total of 55 turbine cars were produced. When Chrysler had finished the user program and other public displays of the cars, 46 of them were destroyed to avoid an import **tariff**. Of the remaining nine cars, six had the engines de-activated and then they were donated to museums around the country. Chrysler retained three of the turbine cars for historical reasons. Of the nine remaining turbine cars only three were functional. One of the cars kept by Chrysler is stored in running condition at the proving grounds, while another car was purchased from a museum by a private automobile collector and is also functional (Frank Kleptz of **Terre Haute, Indiana**). The last turbine car that is functional is owned by the **Museum of Transportation** in St. Louis, was photographed for *Mopar Action* magazine, and appears at car shows around the United States from time to time. An owner of a non-functional car contacted the then Chrysler chairman **Robert Lutz**, who gave him the proper part to make it functional<sup>[*citation needed*]</sup>, making four out of the nine fully working vehicles.

Chrysler's turbine engine program did not die completely. A new coupe body would appear, re-engineered and rebadged, as the 1966 **Dodge Charger**. Chrysler went on to develop a sixth generation gas-turbine engine which did meet **nitrogen oxide** regulations, and installed it in a 1966 **Dodge Coronet**, though it was never shown. A smaller, lighter seventh generation engine was produced in the early 1970s, when company received a grant from the **United States Environmental Protection Agency** (EPA) for further development, and a special bodied turbine **Chrysler LeBaron** was built in 1977 as a prelude to a production run. By then the company was in dire financial straits and needed U.S. government loan guarantees to avoid bankruptcy. A condition of that deal was that gas-turbine mass production be abandoned because it was "too risky" thus giving roots to many **conspiracy theories**.

## References

[edit]

- ↑ "Chrysler Corp., Exner Concept Cars 1940 to 1961" undated ,retrieved on 2008-05-11.

## External links

[edit]

- "Chrysler turbine engines and cars" at **allpar.com**
- "Chrysler turbine program history from a user's view" at **turbinecar.com**

v · d · e	<b>Chrysler</b>	<span>[hide]</span>
<b>Current</b>	Cars <span>300</span> · <span>Crossfire</span> · <span>PT Cruiser</span> · <span>Sebring</span> · <span>Cirrus (Mexico)</span>	
	Vans / SUVs <span>Aspen</span> · <span>Pacifica</span> · <span>Town and Country</span> · <span>Voyager</span> / <span>Grand Voyager (outside USA)</span>	



<b>Manufacturer</b>	Chrysler Corporation
<b>Production</b>	1963
<b>Class</b>	Concept car
<b>Body style(s)</b>	2-door coupe
<b>Layout</b>	FR layout



Chrysler Turbine Car at the 1999 Antique Automobile Club of America show in Hershey, PA

<b>Historic</b>	Cars	300 series · Chrysler 300 · 300M · Airflow · Airstream · Cirrus · Concorde · Conquest · Cordoba · E-Class · Executive · Fifth Avenue · Imperial · Imperial Parade Phaeton · Laser · LeBaron · LHS · Neon · Newport · New Yorker · Prowler · Royal · Saratoga · TC by Maserati · Town and Country · <b>Turbine Car</b> · Windsor
	Vans / SUVs	TEVan · Voyager
<b>Concept</b>	Cars	Airfile · Akino · Atlantic · California Cruiser · CCV · Chronos · Citadel · Falcon · Firepower · Imperial Concept · Java · ME Four-Twelve · Nassau · Norseman · Pacifica Concept · Patriot · Phaeton · Pronto Cruizer
<a href="#">Category</a> · <a href="#">List of vehicles</a>		

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