Flying cars

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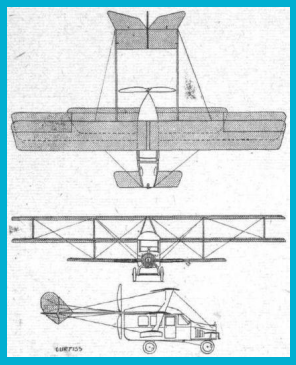
Overview

History- The first attempt

Glen Curtiss- The “Father of the flying car”

- First attempt at a flying car made in 1917.
- Never flew but took a couple short hops.
- Made of Aluminum.
- Had a 4 blade propellor at the back.
- 3 wings that reached 40 feet long.



History- So close but so far

The 1949 Taylor Aerocar was the closest to being a flying car.

- Drove on highways
- Foldable wings (Length as a full airplane is 21 feet.)
- 150 HP
- Fits only 2 people
- 7 foot 2 inches tall and 2,100 pounds

Not only can it be readily converted from an airplane to a roadable car, but also its wings can be folded back along the sides of the detached fuselage and towed behind the automobile like a trailer.
The Aerocar was a “roadable” airplane certified for use as both a plane and an automobile. The prototype was completed in 1949, but it took until December 1956 for the Civil Aeronautics Administration to certify the novel design. Though an ingenious concept, it was unfortunately never a commercial success, with only six units built. (A single “non-roadable” version of the vehicle, the Aerocar II, was offered in the 1960s.)

Aircraft Make & Model: Taylor Aerocar

Length (as airplane): 21 feet

Length (car portion only): 10 feet 4 inches

Length (car and trailer): 24 feet

Wingspan: 30 feet

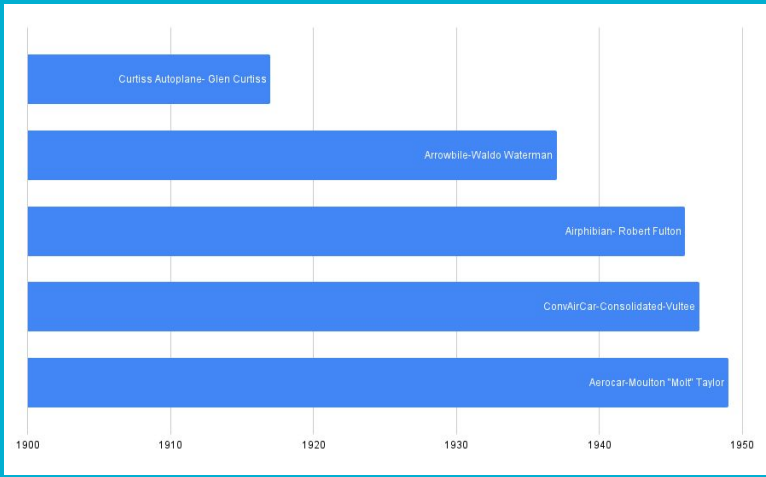
Height: 7 feet 2 inches

Maximum Speed: 110 mph

Range: 300 miles

History- Everything in Between

All the attempts in between the first and most successful.



- Curtiss Autoplane - In 1917, Glenn Curtiss, who could be called the father of the flying car, unveiled the first attempt at such a vehicle. His aluminum Autoplane sported three wings that spanned 40 feet (12.2 meters). The car's motor drove a four-bladed propeller at the rear of the car. The Autoplane never truly flew, but it did manage a few short hops.
- Arrowbile - Developed by Waldo Waterman in 1937, the Arrowbile was a hybrid Studebaker-aircraft. Like the Autoplane, it too had a propeller attached to the rear of the vehicle. The three-wheeled car was powered by a typical 100-horsepower Studebaker engine. The wings detached for storage. A lack of funding killed the project.
- Airphibian - Robert Fulton, who was a distant relative of the steam engine inventor, developed the Airphibian in 1946. Instead of adapting a car for flying, Fulton adapted a plane for the road. The wings and tail section of the plane could be removed to accommodate road travel, and the propeller could be stored inside the plane's fuselage. It took only five minutes to convert the plane into a car. The Airphibian was the first flying car to be certified by the Civil Aeronautics Administration, the predecessor of the the Federal Aviation Administration (FAA). It had a 150-horsepower, six-cylinder engine and could fly 120 miles per hour

- and drive at 50 mph. Despite his success, Fulton couldn't find a reliable financial backer for the Airphibian.
- ConvAirCar - In the 1940s, Consolidated-Vultee developed a two-door sedan equipped with a detachable airplane unit. The ConvAirCar debuted in 1947, and offered one hour of flight and a gas mileage of 45 miles (72 kilometers) per gallon. Plans to market the car ended when it crashed on its third flight.
- Aerocar - Inspired by the Airphibian and Robert Fulton, whom he had met years before, Moulton "Molt" Taylor created perhaps the most well-known and most successful flying car to date. The Aerocar was designed to drive, fly and then drive again without interruption. Taylor covered his car with a fiberglass shell. A 10-foot-long (3-meter) drive shaft connected the engine to a pusher propeller. It cruised at 120 mph (193 kph) in the air and was the second and last roadable aircraft to receive FAA approval. In 1970, Ford Motor Co. even considered marketing the vehicle, but the decade's oil crisis dashed those plans

Plan

- Company XPeng had successful test flights.
- Wants to enter mass production by 2024
- Propellers come out and above the car and are foldable instead of wings.

Prototype in action

Following successful flight tests of the Traveler X2, EV car manufacturer XPeng recently revealed its newest flying car concept at its 1024 Tech Day, where the company showcases its latest innovations.

Developed by its affiliate HT Aero, which has raised $500 million USD in Series A funding, the unnamed vehicle is slated to enter mass production by 2024 at a cost of less than $157,000 USD.

the XPeng flying car is also capable of driving on regular roads thanks to a foldable mechanism that retracts its rotors. Equipped with an environmental perception system that can

evaluate surroundings and weather, as well as a flight control algorithm to help pilots avoid obstacles

Pros

- Minimize traffic pollution.
- Lower emissions for longer distances.
- Direct route.
- Frees up space for pedestrians and businesses.
- More land for agriculture.

The majority of these land-based vehicles burn fossil fuels, even when stationary, producing several harmful substances in the process. This includes substances that are directly harmful to the health of humans such as

- carbon monoxide (an odorless, colorless but toxic gas);
- other hydrocarbons such as benzene, which is known to cause cancer;
- sulfur dioxide which causes respiratory problems and;
- tiny solid particles that become suspended in the air (soot)

Staying on the theme of lower emissions and greater efficiency. Flying cars can take a much more direct route from point A to point B. This means less fuel is required and the journey times are much quicker as a result when compared to a journey on land. Journeys on land often involve many twists and turns, traffic signals and junctions, all of which reduce the efficiency of the journey and increase fuel consumption.

and work

Provides more land to grow for the growing human population.

Cons

- Higher emissions for shorter distances
- Less passengers
- Price of technology
- New infrastructure for takeoff/landing
- Noise

This was an important finding because many people (and companies) see electric flying cars as a solution to transportation within our cities, for journeys like the typical commute which averages around 17km. But this research shows that although VTOLs are promising over longer distances due to their efficiency in cruise phase, these short journeys could actually lead to even higher emissions than existing transportation options.

Due to a requirement that these flying cars must be lightweight to be able to get off the ground without using too much energy, they are only designed for small numbers of people.

This then brings us onto cost. The likelihood is that (at least to begin with), this mode of transportation will be expensive. They will require a trained pilot to transport around a very small amount of people, a bit like getting a mini private jet.

This need for stations will reduce the benefits of this mode of transport along with requiring materials and space which also comes with environmental impacts.

A typical helicopter produces sound at around 100db in flight. So imagine that noise multiplied hundreds of times if flying cars fill our city skies. It’s going to be like living next to a runway all the time!

Summary

- Great idea.
- No for the near upcoming years.
- Lots of commitment
- Shows development and evolution.
- Will separate countries even more.

Overall I think Flying cars is a wonderful idea but shouldn't be produced at a major scale for at least the next 20 years.

This concept requires a lot of commitment which the world doesn't have now with Covid, inflation, and our possible war.

Shows how far we have came and that we never gave up as its been over a century since the first prototype.

Flying cars will separate developed and developing countries even more as they will bring new technologies that the citizens of those countries won't be able to afford. This idea is primarily for the wealthy.

References

Plans

History The first attempt

History so close but so far link 1/link 2

History Everything in between

Pros

Cons