ENGINEERING

# Emotion Key to Turbine

## The feeling of flying a jet plane while actually driving a car will play a large part in winning public acceptance of Chrysler's gas turbine car—By Elizabeth Hall

➤ AN AVERAGE American woman driver behind the wheel of a new gas turbine car feels more like a pilot about to take off in a jet.

For the new type of car is in reality a miniature jet, complete with high whine, vibration-free ride and noiseless engine.

In driving the Chrysler turbine car, I flicked the ignition keys without pressing down on the accelerator and felt a tremendous sensation of power as the huge fan under the hood started whirling. The high, thin whine of the engine as air whistled through the front and out the exhaust pipes, unheard once inside the car, was a softer version of the screeching wail of a jet.

Just to see what would happen, I slammed the accelerator pedal to the floor. Instead of "jack-rabbitting" ahead, the car moved forward normally.

A dashboard dial showed that the fan under the hood was whirling at 30,000 revolutions per minute and could go as high as 45,000 revolutions. An ordinary car engine usually runs at 5,000 revolutions per minute.

From the outside this experimental turbine car, developed by Chrysler Coropration, looks like an ordinary four-passenger, two-door hardtop. It has a black vinyl roof and is painted in a striking shade called "turbine bronze."

But a woman passenger will feel the difference the minute she starts to freshen her lipstick while driving on the open road. There is absolutely no vibration to jar the process.

"Emotion is the whole key to this car," a Chrysler official said. The feeling of flying a plane while driving a car will play a large part in winning the public over to this radically different automobile, he said.

The arrangement under the hood looked much simpler than under the hood of my own car. Among other things, there was no radiator to overheat because the turbine had no liquid cooling system.

In the gas turbine engine, air rushes through the grill in the front and is compressed and heated before it mixes with kerosene and burns. I was told that ordinary high octane gasoline containing lead would only harm the engine.

As the air and fuel mixture burns, the gas inside flows over the blades of the fan, turning it like a giant pinwheel, and then goes out the exhaust pipes in the rear.

The rate at which the gas flows over the blades, I was told, is controlled by a variable nozzle system that changed as I changed pressure on the accelerator pedal.

It was exhilarating. Opening up the car on a freeway, it felt as though the wheels were about to retract and the car become a plane.

But we stayed on the ground and reluctantly I returned from my short trip into the future. The Chrysler official promises that someday turbine cars will be residents in every garage.

• Science News Letter, 85:228 April 11, 1964

BIOTECHNOLOGY

# Brain Disorders Spotted

➤ A NEW PROCEDURE developed at the University of California at Los Angeles helps to spot brain disorders by passing tiny amounts of radioactive material through brain blood vessels.

Although the technique requires complex equipment, it is relatively simple to perform and causes little discomfort to the patient.

Very small amounts of a radioactively-tagged iodine compound are injected into the patient's vein. Highly sensitive radiation counters placed over the heart and next to each temple follow the tagged material as it leaves the heart and circulates through each hemisphere of the brain.

The information is plotted in the form of three graphs.

One graph determines whether the heart is pumping an adequate blood supply to the brain. The other graphs tell how well this blood supply is being delivered within the brain.

This information indicates the approximate location of any disorder which is interfering with the brain's blood supply and gives significant clues to its nature.

With the aid of the new procedure, it has been possible to diagnose such disorders as disease of brain arteries and "blowouts" (aneurysms) in such vessels, brain tumors, and brain tissue damage resulting from head injuries.

The technique appears most useful in conjunction with standard brain diagnostic procedures such as the electroencephalogram which is a recording of brain waves and the angiogram, which is an X-ray of the cranium.

The new procedure was developed by Drs. Delores E. Johnson, George V. Taplin and John C. Kennady of the UCLA laboratory of nuclear medicine and Harbor General Hospital.

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