

Rocket Auto May Herald New Era

Transportation

A new method of transportation with the motive power furnished by spurts of expanding gases, like the trail of a Fourth-of-July rocket, is about to make a bid for practical success.

After secret experimental development, a rocket automobile has been given speed tests at the racing track of the Fritz Opel motor-car factory at Russelsheim, near Frankfurt, Germany, where it was built. Speeds of slightly over 60 miles an hour were attained eight seconds after the start.

A demonstration before experts at the Avus racing track in Berlin is scheduled for the near future. As the speeds on this track are limited to a hundred miles an hour, plans are under way to utilize later a stretch of railroad track which has been offered for this purpose by the German States Railways.

Tests of the rocket automobile are believed to be merely preliminary to the construction and launching of a rocket airplane capable of arising to heights that ordinary propeller-driven airplanes cannot possibly attain. Journeys to other planets across the great distances of airless space are theoretically possible through the use of the rocket exhaust kick as the motive power, for experiments show that the kick of the exploding rocket charge is just as effective in a vacuum

where there is no air as it is under ordinary conditions where there is plenty of atmosphere. Propellers of ordinary airplanes need the air to work against. The rocket is effective in vacuum for the same reason that a rifle fired in an airless chamber would have the same sort of kick that it would in air.

The rocket airplane, once it reached the airless outer space or the upper rarified portion of the atmosphere, would attain great speeds because of the lack of air resistance.

The Opel rocket auto looks like a multiple-barrelled piece of light artillery in speedy retreat. From the rear of the car project twelve large tubes arranged in a rectangle. From these tubes the exploding gases emerge with terrific kick, which sends the car racing along the track. Any highly explosive mixtures can be used such as light gasoline, alcohol, or even pure hydrogen and oxygen mixtures which give the greatest expansion for the least weight.

The pioneer work on the rocket method of propulsion was done by Prof. R. H. Goddard of Clark University, Worcester, Mass., who has studied the problem for the past 19 years. He is now perfecting a rocket intended to travel into the rarified upper air and solve the mystery of its composition and conditions.

Ten years ago Prof. Goddard, a modern Jules Verne, interested the scientific world by publishing data supporting the practicability of a rocket flight to the moon. These researches were under the auspices of the Smithsonian Institution. He designed a rocket that could achieve a speed of 6.6 miles a second, nearly 400 miles an hour, a speed that would allow it escape from the gravitational attraction of the earth. The journey to the moon, at a still greater speed, could be made in eleven hours. The arrival of the rocket, which would not carry a pilot, would be signaled from the new moon's dimly lighted surface by an immense explosion of flashlight powder contained in the rocket's nose.

The chief utilization of the rocket method of propulsion will probably be in the airless outer space because of the low efficiency of the method. The rocket conveyance is self-consuming since it uses fuel rapidly and only a small amount of the energy in the fuel, whether gasoline, explosives or hydrogen and oxygen gases, can be made to kick the rocket along. Where the ground, as in the case of an automobile, or the air as in the case of an airplane, exists, it is better to use the wheel or the propeller to obtain traction.

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Edison Could Explore Says Nobile

Geography

Gone are the days when the Arctic's secrets must be wrested by strong men skilled in ice travel. Today Edison himself might travel in an airship to the arctic and make his own observations.

Such is the opinion of General Umberto Nobile, commander of the dirigible *Italia*, now engaged in scientific exploration of the arctic regions. In a recent communication to the American Geographical Society General Nobile summarized as follows the revolution in exploration brought about by aviation:

"Aviation, which is bringing about profound innovations in every human activity, has opened a new era in the history of polar exploration.

"Nobody can doubt the superiority of aircraft—airplanes or dirigibles—

as a means of exploring the unknown regions of the earth. We can truly say that aviation has produced a revolution in this field. In a few hours it is possible now to make a journey that in the past required months and years of travel with ships and sledges. From Spitzbergen we reached the North Pole in the Norge in sixteen hours, while Nansen in one year and eight months reached only latitude 86 degrees 14 minutes; and in only thirty hours we traversed the unexplored area between the pole and Alaska for a distance of 2000 kilometers.

"One radical change that has taken place in the matter of polar exploration is this: Experts who know how to travel on the ice are no longer needed, and men who know how to

navigate the air take their place. In addition, it is no longer necessary that the scientists of an expedition be men strong enough to support long journeys on the ice and trained in making them. Edison could be a member of an expedition of this kind and read his own instruments himself.

"Certainly there is no field of human activity so well suited as polar exploration to impart a realization of the great contribution that aerial transportation is bound to make to human knowledge; in one year it is possible to reveal what has been sought for centuries."

Unknown Land Objective

One of the few remaining unexplored areas of the world is the first objective of General Umberto Nobile's exploratory (*Turn to next page*)