

## OPEL CONCENTRATES ON LIQUID ROCKET

He Says It Will Enable Future  
Flights in Stratosphere at  
1,250 Miles an Hour.

### GREAT HEAT DEVELOPED

Secret Fuel Will Give 2,380 Calories,  
Sanders Says—Many Ask for  
Trip to the Moon.

Special Cable to THE NEW YORK TIMES.

FRANKFORT, Oct. 1.—Fritz von Opel, whose spectacular rocket plane flight over the airport here yesterday sent doubters to cover, was up and about early this morning.

"It was not a hair-raising stunt so much as a hair-singeing affair," he jokingly observed as he showed a spot at the back of his head where the back fire from one of the rockets had burned away a patch of hair.

Opel takes his pioneer honors modestly and the fame of being the first man to be shot into the air by the force of rockets impresses him less than the satisfaction of having demonstrated that it is practical to replace motors by rockets.

"I wanted to demonstrate that a plane can be pushed forward and upward by the force of escaping gas from rockets," said Opel. "While yesterday's test was successfully carried out with powder rockets, Sanders and I now propose to devote ourselves to perfecting the liquid rocket."

#### Police Limited Flight.

One reason for the brevity of yesterday's flight was the intervention of the police authorities, who had not been initiated into the mysteries of the plane and who threatened to halt the flight unless Opel agreed to confine it to the bounds of the air-

drome. Rather than abandon his plan, Opel consented, although it forced him to make a difficult turn with a strong rear-wind blowing, which forced his frail rocket plane slightly out of balance, compelling him to make a premature landing after having been shot along a wave of fire and smoke for seventy-five seconds for a distance of one and one-fourth mile.

Both he and Friedrich Sanders, his co-inventor, are more than optimistic over the future of flying with the aid of liquid fire.

The flier said:

"Once this problem has been worked out in its finality the flying of the future will take place in the stratosphere where there is no air resistance. A plane which now travels at a speed of 200 kilometers (about 125 miles) in areas of air resistance will easily attain a speed of 2,000 kilometers an hour once it reaches the stratosphere—and that with the same consumption of fuel."

#### Turns to Liquid Rocket.

Opel declared the liquid rocket, which is now the object of his experimentation, will be a single rocket fed from a tank with liquid fuel whose flow can be regulated, thus enabling the pilot accurately to gauge the speed of his motorless plane. The composition of the liquid which it is proposed to feed into the rockets is still a secret known only to Opel and Sanders, but the latter stated it would be able to develop 2,380 calories of heat, as compared to 1,600 of the most powerful modern blasting agencies or the 750 calories of powder such as was used for yesterday's flight.

Sanders added:

"The liquid rocket which I envisage will leave neither smoke nor flames. It will be able to burn fully forty minutes, according to results achieved in my laboratory, and I am confident it will be possible to construct liquid rockets with lifting or pressure capacity of 3,000 kilograms (about 6,600 pounds), and that it will be able to attain a 'push push' from escaping gasses amounting to 1,180 meters (about 3,870 feet) per second."

This German rocket expert discusses his specialty with an air of modesty and frankly admits that speculative theories of trips to the moon interest him far less than the actual work of experimentation and its results, as demonstrated in yesterday's flight when it was observed that he had succeeded in developing a powder composition for his rockets that eliminated detonations and explosions.

Both Opel and Sanders have been swamped with letters from curious folk who are ready to join the first flight to the moon.

## THE ROCKET-DRIVEN PLANE.

The fact that the rocket airplane was shot through the air for only seventy-five seconds at Frankfort, with FRITZ VON OPEL in it, should neither discourage the prophets nor gratify doubting Thomases. At Kitty Hawk on Dec. 17, 1903, the Wright plane, fitted with a 30-horsepower engine, kept the air for twelve seconds only on the first trial, and on the fourth for fifty-nine, flying through the air half a mile. The other day ORLEBAR, the British naval officer, flew a seaplane at the rate of 355 miles an hour. The record for a non-stop flight is 4,460 miles, made by FERRARIN and DEL PRATO, from Rome to Natal, Brazil. It will not do to jump to the conclusion that the rocket airplane cannot be developed to do great things in aeronautics.

As Ambassador SCHURMAN says of the rocket principle of propulsion, "One today should not use the word impossible." With more experimenting, the English Channel may soon be crossed by a rocket-driven plane. Herr VON OPEL proposes to attempt it. The problem is whether the machine and the human frame can stand the shock of the explosions. And can the machine so shot forward be controlled by the operator for direction and landing? What the French call "astronautics," the sending of the rocket-plane up beyond the field of gravitational force of the earth, may be dismissed for the present. Concentration will be upon rivalry with the airplane driven by a gasoline motor. VON OPEL himself says: "In the end we may try to penetrate into space, but that is still a dream." The rocket automobile, which the Germans call the devil car, has been driven at the rate of 120 miles an hour, which may be regarded as auspicious for attaining a much higher speed. MAX VALIER, the Austrian inventor, admits the difficulty of applying the rocket principle satisfactorily to planes:

A relatively high exhaust speed can be obtained from the explosion of hydrogen with oxygen or similar fluid propellants of high kinetic power, but these are expensive, besides being heavy, while the process of their combustion is insufficiently investigated.

The Breslau Society for Aerial Navigation rejects the use of powder. It has found that liquid oxygen mixed with alcohol is not dangerous and is, moreover, cheap by comparison. A motor for the use of this liquid fuel is being constructed. German scientists are giving a good deal of time to the idea of the new propulsion. Here in the United States there will also be experimenting. In these days wonderful inventions are not long delayed. The rocket-driven plane is already a possibility.