

UA Scientists Studying Atmosphere Try Rockets

By JOHN RIDDICK

All sorts of things can be done with rockets.

You can shoot at an enemy, celebrate a holiday—or even find out how the wind blows.

The Institute of Atmospheric Physics at the University of Arizona has been interested in the last possibility this summer.

On a minute scale, institute scientists have been following a program with small rockets somewhat like that at White Sands with the big ones.

There are lots of reasons for wanting to know more about the layer of air that hugs the 2,000 feet above the earth. It's the part that fills up with pollution and it has much to do with communication.

The institute was curious about a low altitude jet of air over Tucson discovered last year by one of its meteorologists, Lee Sims. It comes in from the northwest at 25 miles an hour 1,000 feet up around 6 p.m. in the summer.

Some study of low level winds has been done by the institute using balloons, but this is expensive and a lot of trouble. Scientists there wondered if a cheap rocket designed by Orville Carlisle, a 'sometime shoe salesman in Nebraska, might not do the job.

To begin with, it is the most reliable small rocket around. Rocket scientists at White Sands have tested it and testified to that. The question was—would it go up 2,000 feet?

Built into the rocket is an automatic system that blasts out the nose cone allowing it to float back to earth by parachute. The flight down would test the wind.

Robert Walsh, a summer assistant and senior in physics at the California Institute of Technology, did the work under the direction of Dr. James E. McDonald, UA senior physicist.

As at White Sands, Walsh was first concerned about his power. He rigged up a steel cart and took motion pictures at high speed

while it was pushed by a blast from the gun type powder charge.

Walsh found there was a pound of thrust. In comparison, one engine of a B47 bomber has 6,000 pounds of thrust.

Then there was the rocket itself. To test drag, Walsh mounted it on a spring scale outside a fast moving car.

For the parachute, wind tunnel was built. But that didn't work too well because of a tendency of parachutes to spin. A 50-foot drop from above the stage at the Fine Arts Theater, however, showed that the parachute would drop at 5 feet per second.

Now everything was ready for the field tests which were carried out on the Downtown Airport.

The power for small rockets—like big ones—doesn't last long. Most of the trip is a matter of coasting.

The power for the little rocket burnt out in one second when it was 50 feet up and moving at 100

miles an hour. It rose to 600 feet and then started down.

"It doesn't fall at a uniform speed and so we had to use two theodolites (telescope like instruments) to track it," McDonald said.

"There was an astonishing amount of turbulent updraft close to the surface. Sometimes, the parachute would hover almost stationary when there were no dust devils."

Well, both the institute and the United States government are still working on their separate rockets. Neither has the final answer. Both, presumably, are optimistic.

While White Sands wants to hit a target 2,000 miles away, the institute only wants to go up 2,000 feet.

There's room for some amateur rocket designer to come to the aid of science and help go those extra 1,400 feet, McDonald said.



—Citizen Photo by Bernie Sedley

ROCKET FIRING

Robert Walsh lights the fuse of the best little rocket in existence. A Tucson High graduate, he is now a senior at California Institute of Technology and was hired by the UA Institute of Atmospheric Physics as a summer assistant. The nose cone blows off at the top of its flight so that the rocket floats back to earth by parachute.

Southern Arizona Camp Meeting

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Rev. Melvin Maxwell
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Services Daily
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Spiritual Singing



Israeli Draft Dodgers Aided By Doctor

JERUSALEM, Israel — A medical adviser to Israel's Ministry of Justice has been found guilty on 1 charges of aiding Israelis in draft dodging. He is British-born Dr. Simon Kelly, 59, who was convicted yesterday of falsely certifying that 24 men were mentally unfit for service. Kelly will be sentenced Friday in Jerusalem District Court.

Relief For Refugees Ends In Austria

VIENNA—The International Red Cross said today it has ended its relief actions for Hungarian refugees in Austria.

Austrian Minister of Interior Oskar Heimer, in thanking the organization, said the Red Cross agencies from 55 countries, sent funds and supplies worth \$14,700,000 for the refugee work during the past 11 months.

U. S. Metallurgists Tour Soviet Mills

MOSCOW—An 11-man delegation of American metallurgical specialists today began a 20-day inspection tour of Soviet iron and steel mills and research institutes.

The delegation, headed by Prof. John P. Nielsen of New York University, arrived by air from Prague, Czechoslovakia, yesterday.



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