

Ask "Mr. Mike"

Smoke does not always rise

Dear Mr. Mike:

While watching a news story about the space shuttle on TV, my roommate asked me if the passengers could smoke while on board. After hitting him on the head for asking such a stupid question, I began to wonder which way the smoke would rise if they did. Can you answer my question Mr. Mike?

**Brent Caldwell
General Science**

Gee Brent, how long have you been in science? First let me explain why it is that smoke rises while one puffs away on the Earth.

When a substance is on fire, three things are usually released: light, heat and debris. In our case, the debris is the white smoke, and the heat in the air that contains the smoke causes it to rise.

Heated air rises because the gas molecules are in an excited state and are farther apart from one another. This means that the heated air is less dense than the surrounding cooler air, even though it is of the same molecular composition. Thus, if it is less dense it will rise. The only violation of this fundamental natural law is in the Reagan administration.

As for your question, a key factor is that gravity affects matter: Dense matter is affected more severely by the pull of gravity than less dense matter. That's why you sleep so much. But in our situation, cool air has more gravitational pull on it than does

warm air, because the molecules are closer together and thus more dense. So one of gravity's effects on gasses is to layer them according to either molecular density or temperature or both or neither or something.

When one is in space, say, orbiting the Earth in the space shuttle, one is essentially in a zero-gravity environment. Although there is minimal gravity to layer the various gasses within the atmosphere of the shuttle, the gasses are still under the pressure of the shuttle container walls. They keep their respective density properties.

Space is a vacuum and it can clean your rug. The shuttle is not; it is a pressurized container. Now if we were to light a cigarette, the smoke would not rise — it would disperse in all directions since the effect of gravity orienting the arrangement of gasses is negligible.

If you ever have the chance to smoke while in the shuttle, Brent, don't do it. The flame would consume the oxygen and you would die.

Dear Mr. Mike:

Last week while playing a friendly game of fastpitch softball, I was beamed in the noggin with a curve ball. It was a great pitch until I caught it with my ear. How is it that a pitcher can throw a ball that curves in-flight?

**John Duffy
Business**

Go get a bun, John. You're a real ballpark weenie.

Let's start with something real simple. Pressure compresses air. Now this one's a little tougher: It's the ball's spin that causes changes in the relative pressures of the air surrounding the ball in-flight, causing it to curve. Now for some detail.

The seams on the ball have a significant effect on flight characteristics. If the ball is thrown with no spin on any axis, like a shotput, the seams will have little or no effect in the ball's path or direction. If the ball is thrown with spin, all kinds of things happen.

When the ball spins on an axis, surface air pressure increases and decreases greatest in the areas perpendicular to that axis due to the irregularities of the ball's surface — the seams and smooth areas.

As a ball spinning on a vertical axis moves along a path, one end of the axis perpendicular to the spinning axis rotates against the path of direction and the other end with it. The result is that the side spinning the same direction as the path direction creates less resistance than the opposite side. This difference in pressure on the two sides of the ball perpendicular to the path accounts for the lateral movement that beamed your noggin.

Thus, a ball spinning clockwise on a vertical axis will curve left and a ball spinning counterclockwise will curve right.

Greek Week competition ends

By Michelle Brence

Of the Emerald

It wasn't the Olympics or even the world heavyweight title, but the competition still was fierce. During a week of grueling contests, the 11 University sororities and 14 fraternities were in constant battle for the honor of winning in the "Greek Week" competitions.

Monday was kicked off by Games Day in which the houses competed in traditional games, such as tug-of-war, and a not-so-traditional competition of a chicken-wing-eating contest. When the points for each competition were tallied, Phi Kappa Psi fraternity and Alpha Chi Omega sorority consumed their way to first place.

The Greek Air Band competition, which required a group from each house to perform a "lip-sync," was held Tuesday night in the EMU Ballroom. Lambda Chi Alpha, Chi Psi and Phi Kappa Psi respectively placed first, second and third for the fraternities. Alpha Chi Omega

led the sororities, followed by Delta Gamma in second place, and Alpha Omicron Pi in third.

The backyard of the Phi Kappa Psi fraternity was the site of the Wednesday night beer chug, in which teams made up of three sorority members and three fraternity members tried to gulp beer faster than their rivals. When it was all over, the team of Sigma Alpha Epsilon fraternity and Gamma Phi Beta sorority held the top spot. Sigma Phi Epsilon fraternity and Chi Omega sorority were just a swallow behind for second place, and Theta Chi fraternity and another team from Chi Omega came in third.

Friday night, the sororities and fraternities participated in the Greek Serenade. The sororities traveled to each fraternity where they presented their song and then heard the fraternities' performances. Lambda Chi Alpha fraternity and Alpha Chi Omega sorority took the first place, Chi Psi fraternity and Delta Gamma sorority cap-

tured second, and Delta Delta Delta sorority and Sigma Phi Epsilon fraternity came home in third place.

On Saturday afternoon the houses set their papier-mache creations afloat on the Mill Race for the Canoe Fete competition. Chi Psi and Alpha Tau Omega fraternities and Delta Delta Delta sorority collaborated to win first place. A float made by Theta Chi and Sigma Nu fraternities and Gamma Phi Beta sorority won second prize, and the construction made by Lambda Chi Alpha and Phi Kappa Psi fraternities and Alpha Chi Omega sorority drifted into third place.

Placing in some events and participating in others earned points for each of the houses in order to determine the overall winners of Greek Week. Alpha Chi Omega, Delta Delta Delta and Gamma Phi Beta respectively walked away with first, second and third place trophies for the sororities.

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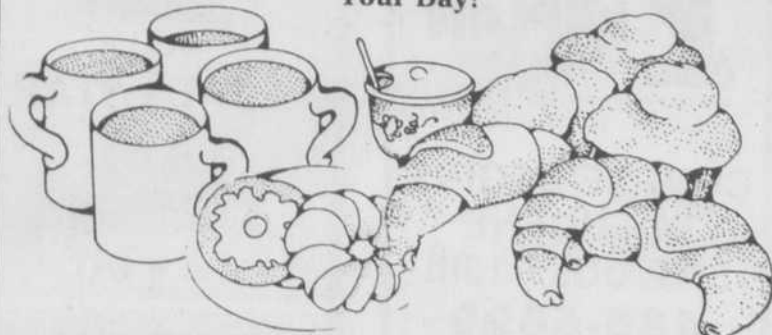
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