Answer #280

The answer is (a) The can will RAPIDLY implode, as seen in an mpeg video by clicking your mouse on the photograph below.

When the can is removed from the hot plate and rapidly cooled by the water, the steam in the can IMMEDIATELY condenses, creating a partial vacuum in the can, thus causing it to collapse. This process occurs much too rapidly for water to be drawn up into the can by the low pressure relative to the outside atmosphere. The only way for the pressure in the can to be equalized so rapidly is for the can to collapse.

After the can rapidly collapses with a loud "thunk," the remaining volume of the collapsed can does in fact fill with water, due to the reduced pressure in the can.

Archive 14

Question of the Week

Outreach Index Page

Lecture-Demonstration Home Page

For questions and comments regarding the *Question of the Week* contact
Dr. Richard E. Berg by e-mail or using phone number or regular mail address
given on the Lecture-Demonstration Home Page.