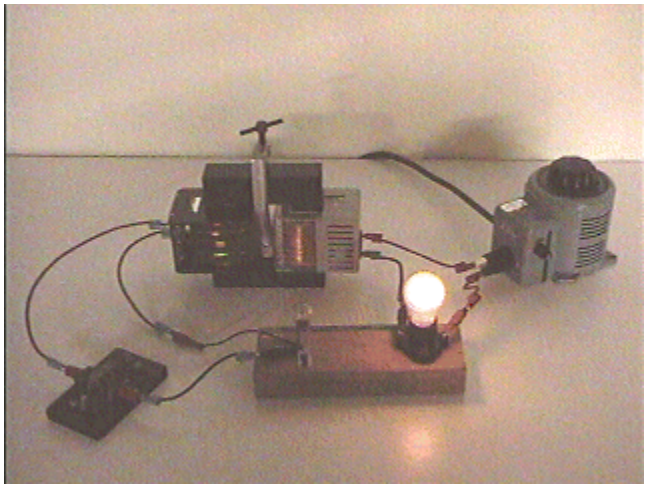
Question #55

A transformer with a large light bulb in its primary circuit, as seen in the photograph below, has an open secondary - that is, nothing is connected across the secondary coil of the transformer. The primary coil of the transformer is on the right, and the secondary is on the left in the photograph. Pushing the switch in the lower left corner of the photograph connects the small light bulb across the secondary coil of the transformer. The variable transformer at the right in the photograph is used to adjust the secondary voltage to the proper amount for the light bulb that will be connected.



With no load on the secondary coil, the light bulb in series with the primary coil glows. The coil has a relatively small impedance so it allows a significant amount of current to flow.

The question this week involves what the primary bulb will do when the switch is closed so that the secondary bulb lights.

When a light bulb is connected across the secondary coil of the transformer, the light bulb in series with the transformer primary coil will

- (a) get brighter.
- (b) get dimmer.
- (c) remain the same.

Click here for Answer #55 after March 12, 2001.

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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.