



How to test a condenser. The left hand diagram shows how the plater are arranged. There is no electrical connection between the two sets of plates. To the right is the hook-up for testing as explained in the article

Test Your Condensers for "Shorts"

natural wave-length of exactly 100 meters, you would suppose that, if you cut the wire precisely in the middle (assuming there was some way of keeping the aerial from falling), the wave length of each separate half would be exactly fifty meters. For practical puroses, it would be. But theoretically it wouldn't, and it would be possible with extremely delicate measuring instruments to prove that each half had a wave length of something more than

This is because the two ends of the cut wire, assuming again that the serial didn't fall and that the ends were The tiny condenser. A condenser, as we have already learned, has the ability to store up and release electrical energy. and these two ends would be able, by this storage of energy, to add a mire to the the wave length of each half of the baseball

half the wave length of the original

Suppose now that we attached to each of these two ends a metal plate and Gplaced these plates very close together time) with their surfaces almost touching. We would of once increase the capacity of this condenser and add still more to the wave length of each half of the

The greater the surface of the two metal plates we thus place near toadd to the capacity of the condenser, and therefore to the wave length of

But the moment any tiny parts of these two metal plates touch each other they cease to be a condenser and be-come simply a conductor; instead of storing up and releasing electrical en-ersy, they merely pass electric current

when the two plates of a condenser touch, it becomes "short circuited" or, in radio parlance, "shorted," and is no longer a condenser, no matter how many plates it has or what you parl or it. A condenser to the condenser is the condense is the condenser is the condenser is the condenser is the condense is the condenser is the condense is the condenser is the condenser is the condense is the condens ric current through it; its function is Jr. to store up the energy caused by the difference in voltage between the currents impinging on the adjacent plates.

Condensers quite often get out of rder. Fixed condensers will meet with ocidents that will permit two adjacent layers of tinfoil or copper foil to touch each other, and they are then "aborted" and cease to be condensers. If a condenser is subjected to a voltage ifference too strong for the thin subtance that separates the plates, this of a sudden pop got up and went down ric spark and thus the two metal sur-

plates much as the cards do when you you that after the ferst sip you'll remain to cheer altho you came to jeer.

Il, at any point, the buzzer buzzes, with a buntch of them, come on, wats a sip?

Wats a sip of terpentine, for that two plates are touching at that particular setting of the condenser. If you can turn the knob all the way around the your allways saving Im the hardest your allways saving Im the hardest

they leave the factory, but that does being I not guarantee that they are in first-class shape when they reach you. Shipping and unpacking and handling in the store by clerks and shoppers all mbject them to the likelihood of dam-

Before you pay from five to six dol-lars and a half for a variable condenser, make the clerk test it this way with a buzzer and dry cell.
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Today's Radio Program

Newark, N. J., Station (WJZ) (Westinghouse

M .- "Man in the Moon" stories fo Newark Sunday Call.

7.80- "A Vision of War, eulogy to our vetrans, by Robert Inversoil, read by an editor of the Truth Seeker.

7.45 "Gold Star Mothers," by Ailce Dur-45 "Gold Star Students," by Ber-

(General Electric Company) 12.30 P. M - Early stack market quota-

ners: Electric Company radio engineer 145—Concert program (Eastern standard Pittsburgh Station (KDKA)

7 SO P. M.—Sporting results.
9—Plano selections by Richard Myers.
9 30—Violin selections by Thomas Berker.

Little Benny's Notebook

By Lee Pape

We was eating supply today and all the cellar and came back with a bottle Pariable condensers, as all novices throw by this time, are formed of many plates. Some of them are fixed staplates. Some of them are fixed statement of the case. The others are attached to a shaft in the middle and, when this shaft is turned, they interleave between the stationary on the statement of the case. The middle and, when this shaft is turned, they interleave between the stationary of the cermarks of a nasty dig. but I assure you that after the ferst sin you! I remain

plates much as the cards do when you shuffle a deck scientifically, and, as they are moved farther and farther inside, the total surface of all the plates is increased, which increases the capacity of the condenser.

Now it sometimes happens that a variable condenser will have one point on just one plate bent or chipped so that, at one point in this turning, it will touch the plate above or below it. That "shorts" the whole condenser and destroys its usefulness.

Test your condensers. Hook them up to a buzzer and dry cell as in the illustration. Then slowly turn the knob.

If, at any point, the buzzer buzzes, you know you must have let the electric current through, and that means that

turn the knob all the way around the scale without the buzzer buzzing your condenser is all right.

Test your phone and grid condensers by the same method. Hook this buzzer size of the condenser and, with the bare end of the other wire, touch the other side of the condenser. If the buzzer does not buzz you are all O. K.

Most standard makes of condenser are carefully tested and inspected before they leave the factory, but that does being Hamberger stakes without enuff

> Philadelphians Sail for Europe Among the passengers satting from New York today on the steamship Berengaria are the following Philadel-phians: Mr. and Mrs. C. W. Middle-ton, Mr. and Mrs. William Auli, Major Robert Bowie Owens, D. S. O. Mr. Robert Bowie Owens, D. S. O. Mr. and Mrs. Paul Thempson, Mrs. Wil-liam F. Beckman, Miss Pauline Geneal,

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day 2 P. M. Remains viewed Tuesday, 8 to 10 P. M. Remains viewed Tuesday, 8 to 10 P. M. LEACH.—On May 87. 1020, at his residence, 2118 Spruce at, after a long silness, JOSIAH GRANVILLE LEACH, in his 80th year. Funcral services at 8t, Peter's Church, 8d and Pine 8ts., on Wedneaday, 2:30 P. M. Interment private, at Cape May N. LENT.—Suddenly, May 26, MARTHA J. Wife of late Thomas W. Lent (nee Weaver) Relatives and friends are invited to attend funeral services, at the parlors of Ramusi W. Kehr & Son, N. W. cor. 21st and Diamond sts., Wed., 2 P. M. Piscisely, Int. Fernwood Cem. Members New York and Philadelphia

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residence of her son-in-law. Cheries C. Wills, Vincentown, N. J. Int. M. E. Cem., Pemberton.

RANE.—May 27, 1922 JOHN, husband of Flizabeth Kane. Relatives and friends, also all organizations of which he was a member, are invited to attend funeral. Wed. 8:30 A. M., from his late residence, 6629 Tulip at., Tacopy. Solemn requiem mass at the Church of St. Leo 10 A. M. Int. St. Dominiof Cens., Holmesburg.

KEAST.—Suddenly May 28, EDWIN ALBERT, husband of Bessle Job Keast aged 55, Puneral services at his late residence, 6131 McCallum at., Germantown, Wed., 11 A. M., Int. private.

KENDIG.—Of the Marlyn, 46th and Walnut ats. on \$\frac{kay}{26}\$, 1922, John, husband of Mary Melzger Kendig. Relatives and friends are invited to the service, on Tues-