

Brief answers
to short questions

Sheila's Shorts

By Sheila Miller



Stray voltage ships out

In a recent issue of Lancaster Farming, I reported on a 'hot' subject — stray voltage and its potential for creating production problems in milking parlors and stanchion barn assembly lines in the dairy business.

That story was read by one of our subscribers, Fritz Preyer, a marine electrician on the Jersey Shore. He contacted me the following week and discussed via the telephone that stray voltage in his business is an intolerable situation. Mr. Preyer owns Marineonics, Mantocoking, New Jersey.

I listened intently as Preyer explained how he has eliminated the problem of stray voltage in boats and ships and I asked him to follow up our conversation with a letter.

His letter arrived several days later and read:

"Your problems in farm buildings are not unlike problems I've found in boats over the past 20+ years. We've had to eliminate all stray voltages and currents on board, not because of shocks or tangles, but because of electrolysis which can destroy underwater fittings and sink a boat in a matter of days.

"As you asked, I'm sending these drawings, showing a 120 volt 2-wire system for simplicity. But a 3-wire 120/240 volt system or a 3-phase 4-wire system would exhibit the same problems if unbalanced. And these systems are seldom balanced."

Admittedly, I am no electrician. About the closest I come to un-

derstanding electricity is changing a lightbulb or throwing the circuit breaker in the baffling box in the basement. The rest of the details I leave to the experts to understand and sometimes explain to this inquisitive writer — with many short circuits in communication at time, I'm afraid.

If Mr. Preyer's drawings would have been a map to a buried treasure instead of illustrations on electrical systems, I'm afraid I never would be able to find the pot of gold. So, I am letting the drawings speak for themselves.

Luckily, Mr. Preyer included a list of "points to consider":

- ✓ "There is no reason to ground the neutral in any place other than at the utility pole;

- ✓ Don't forget, voltage drops in both the line and neutral, pulling the line voltage down and pulling the neutral voltage up above the ground potential;

- ✓ Neutral voltages above ground at the load end may be as much as 5 volts above ground;

- ✓ Grounding of the neutral at the load end surely invites ground currents and stray voltages;

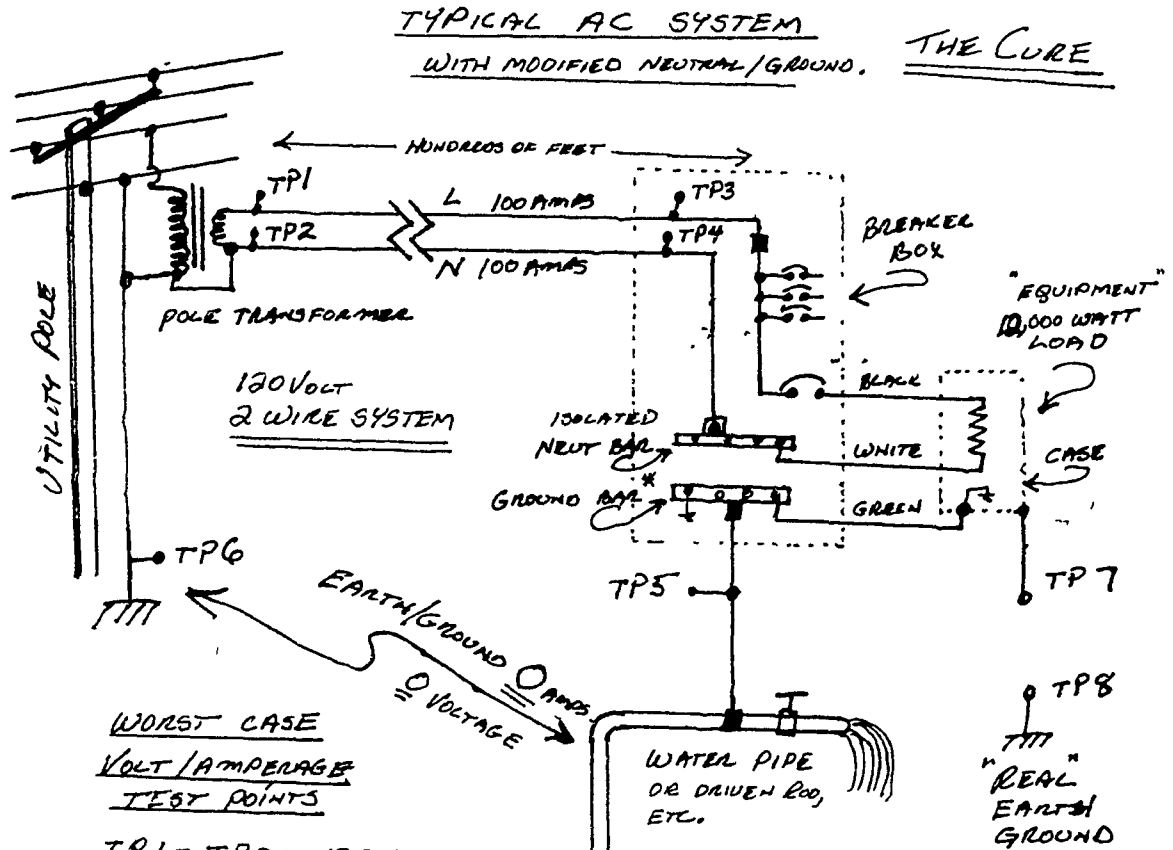
- ✓ Multiple grounds invite ground currents;

- ✓ Neither the neutral or line can have a path to ground anywhere in the building or barn; and

- ✓ Metal objects subject to stray voltages are probably freely corroding and rusting away, including plumbing and metal buildings.

Any questions?

If so, Mr. Preyer invites you to send them to him at his business address: Marineonics, 188 Cedar



WORST CASE VOLT / AMPERAGE TEST POINTS

- TP1 - TP2 = 125 VAC
- TP3 - TP4 = 105 VAC
- TP5 - TP6 = 0 VAC
- TP7 - TP8 = 0 VAC

LAST 2 READINGS INDICATE
NO STRAY CURRENTS OR VOLTAGES
ARE TRAVELING THRU OTHER
PATHS IN BUILDING METAL
CONDUCTORS OR GROUNDS!

- TP1 - TP3 - 10 VOLTS (LINE DROP)
- TP2 - TP4 - 10 VOLTS (NEUT PULL UP)

ONLY ONE GROUND OF NEUTRAL AT POLE,
THEREFORE NO GROUND CURRENT AND NO STRAY VOLTAGES!

* NOTE -

ADDITIONAL GROUND BAR
IN BREAKER BOX - GROUNDED
TO BOX - NEUTRAL ISOLATED
FROM BOX -

ALSO NOTE -

NEUTRAL CURRENT CARRYING
WIRE IS NOT CONNECTED
TO ANY OTHER METALIC
OBJECT IN BUILDING.

Pt. Avenue, Brick Town, N.J. 08723
or P.O. Box 13, Mantocoking, N.J.
08738.

Hopefully the dairy farmer's
ship has come in for solving stray
voltage problems thanks to the
concern and interest of this marine
electrician.

SCS grows specialized conservation plants

HARRISBURG — Plants provide ground cover which reduce soil erosion and improve water quality of streams. New and better variety of plants do not just happen, they are planned and developed.

Plant Material Centers operated by the USDA Soil Conservation Service, with cooperating agencies, have tested and released more than 200 different varieties of conservation plants for commercial production and use in conservation programs. Currently, seed growers and nursery owners are commercially producing more than 140 SCS-released varieties.

PMC's have released most of these plants for solving soil and water conservation problems within the last 10 years. In 1979, the commercial value to the seed and plant industry from the commercial production of SCS-released plant varieties was approximately \$26 million. The seed produced in one year was enough to vegetate 13 million acres.

In recent years, the Northeast Plant Materials Center at Big Flats, New York, released erosion control plants such as Chemung crownvetch, Lathco flatpea, Arnot bristly locust, Streamco willow,

and Tioga deertongue grass. These plants are used on roadsides, streambanks, utility rights-of-way, and in strip mine reclamation.

All over this country, cover provided by SCS-released plant materials is helping to control erosion and sedimentation by stabilizing the soil, filtering runoff, and serving as windbreaks.

This plant cover also provides many side benefits. Conservation plant materials provide food and cover for wildlife, provide forage for livestock, beautify the landscape, and, if properly selected and positioned, can cut energy costs for heating and cooling houses and commercial buildings.

Last year, through a public participation campaign conducted by SCS, citizens considered alternatives to Federal management in the support of PMC's. Out of the responses received, 85 percent of the public recommended SCS continue operating PMC's.

In view of this public approval, SCS will continue the search for conservation plants to meet the needs of all SCS soil and water conservation programs, including plants with potential energy conservation characteristics.

Learn to make slipcovers

YORK — Does your upholstered furniture need a new look for spring? Slip covers can give that new look to a room. You can learn to make your own slipcovers in a workshop. Making Slipcovers being offered by the Cooperative Extension Service of York County. The class will be held April 14, May 26, & 31 - 9:30-12:30 p.m. at the 4-H Center.

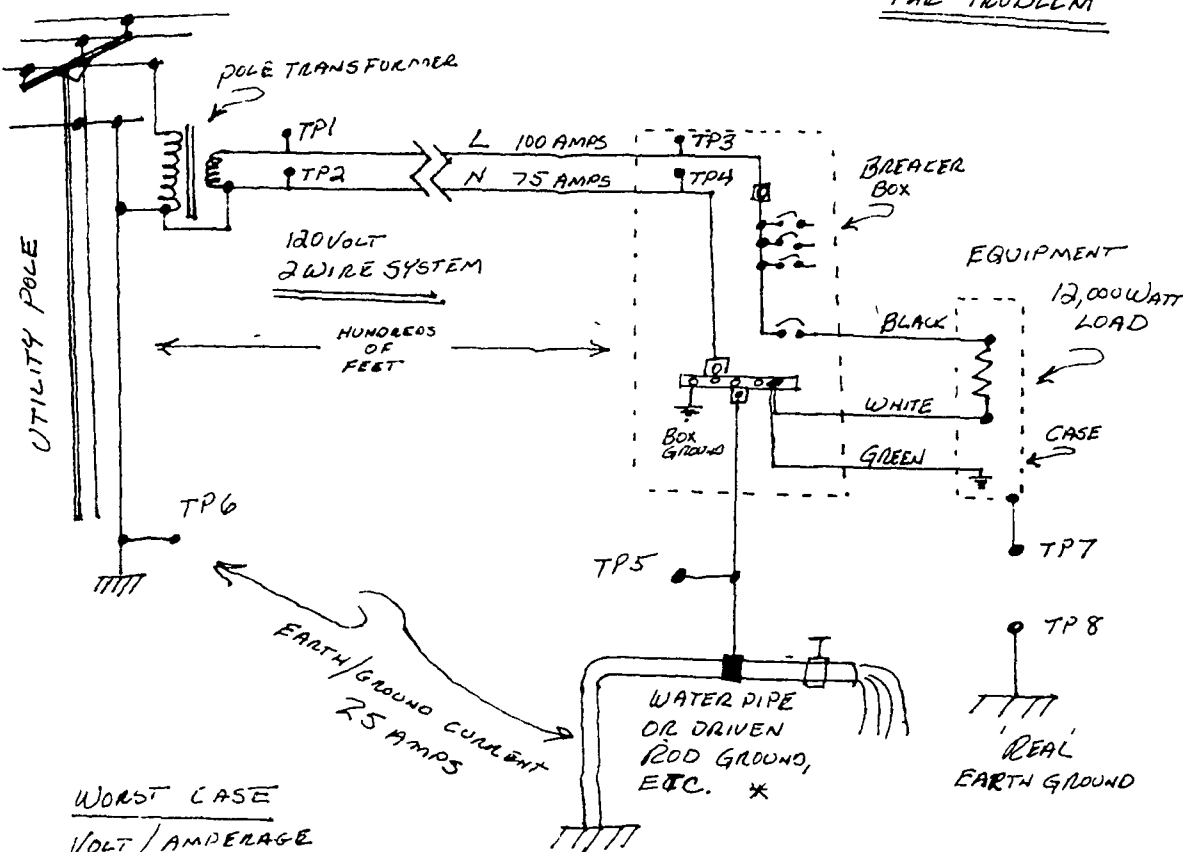
According to A. Joan Lam-

person, extension home economist, this is a hands-on class, in which you will either make your own slipcover or help someone else. You will learn about fabrics, measuring, figuring yardage and how to construct slipcover.

Advance registration is necessary at the York County Extension Office, 112 Pleasant Acres Road, York, PA - phone 757-9657.

TYPICAL AC SYSTEM

THE PROBLEM



WORST CASE VOLT / AMPERAGE TEST POINTS

- TP1 - TP2 = 120 VAC
- TP3 - TP4 = 110 VAC
- TP1 - TP3 = 10 VAC (LINE DROP)
- TP2 - TP4 = 5 VAC (NEUT PULL UP)

LAST READING INDICATES 5 VOLTS AC
IS BEING IMPRESSED ON GROUND SYSTEM
AS STRAY VOLTAGE, AND AS SHOWN 25 AMPS
STRAY GROUND CURRENT BACK TO POLE
GROUND! TP5 - TP6 = 5 VAC.
TP7 - TP8 = 5 VAC.

* NOTE

ALSO CONNECTED TO OTHER
CONDUCTING PATHS IN BUILDING
OR BARN - AS IN PLUMBING,
HEATING PIPES OR DUCTS, STALLS,
OVER HEAD RAILS, DRAINS, ETC.,
CAUSING TINGLES & SHOCKS TO
PERSONNEL & ANIMALS! SEE
VOLT CHART (TP5-TP6) (TP7-TP8).