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PRACTICAL ELECTRICITY

Study Procedure and Practical Assignments

1. Review your text, "Photographic Electricity."
2. Read and study your text "Practical Electricity."
3. You should know:
 - A. the precautions in using your multimeter
 - B. how to use the ohms, current, and voltage functions of your multimeter
 - C. how to test and clean switches
 - D. how to test fuses, resistors, capacitors, coils, lamps, and batteries using your multimeter
 - E. how to test rechargeable batteries used in photographic equipment
 - F. how to identify complex switches in schematic diagrams
 - G. how to select the proper solder for photographic equipment and how to prepare your soldering iron by tinning the tip
 - H. how to prepare a wire for soldering
 - I. precautions in soldering to printed circuit boards and flex circuits
 - J. how to remove solder
 - K. how to connect wires by splicing
4. Your practical assignment for this lesson is in two parts. You will first build a DC power supply which you can use in testing and troubleshooting photographic equipment. Then, you will use your DC power supply in performing experiments on resistor circuits.
5. Prepare your work area for building your DC power supply. You will need your screwdrivers (straight and phillips), chain nose pliers, wire stripper and cutter, soldering iron, multimeter (VOM), your power-supply kit, and the lesson supplement, "803 Power Supply."
6. Read through the 803 Power Supply Supplement. Then, check the individual components in your power-supply kit against the parts list on page 4. You may follow through and perform the experiments described in Phase I and III on your own if you wish — this is strictly at your option. The only instructions you'll be concerned with for your lesson assignment are those contained in Phase II, pages 16 through 18. Carefully reread and follow the construction steps in Phase II. When you finish, you will have a DC power supply for which you'll find many applications in servicing photographic equipment.
7. Do not send in your DC power supply for grading. Rather, complete the "check-out" procedure page. This page is labeled "E-2-1" at the top, indicating a page which is to be returned for grading.
8. Be sure to complete all steps of the check-out. Write your responses in the spaces provided in the check-out procedure. Your responses here will be used to determine part of your practical grade for the lesson. After completing the check-out procedure, keep page E-2-1 with your completed written quiz to be returned to the school for grading.
9. The second part of your practical assignment involves using your DC power supply to perform practical experiments. Refer to your lesson supplement "Breadboard Circuits For Practical Experiments."
10. Read the introductory section of "Breadboard Circuits For Practical Experiments." This explains how to use the breadboard experimenter and the components you have received.

11. Perform breadboard assignments #1, "An Insight Into Ohm's Law," described in your supplement, "Breadboard Circuits For Practical Experiments."
12. Complete the test questions at the end of breadboard assignment #1, "Test Questions From Ohm's Law Experiment." This page is labeled "E-2-2." Write your responses in the spaces provided. Then, remove page E-2-2 from your supplement, "Breadboard Circuits For Practical Experiments." Keep this page with your written quiz and the check-out page E-2-1. Your responses on the breadboard experiment will be used to determine part of your practical grade for this lesson.
13. Perform breadboard assignment #2, "Kirchoff's Law In Series Circuits."
14. Complete the test questions at the end of breadboard assignment #2, "Test Questions From Kirchoff's Law in Series Circuits." This page is labeled "E-2-3." Write your responses in the spaces provided. Then, remove page E-2-3 and add it to the other materials you are returning to the school for grading.
15. Your practical grade for this lesson will be based on your check-out of the DC power supply and on your two breadboard assignments. Check to make sure you have the following:
 1. pink form #6611-E-2
 2. page E-2-1, "Check Out Procedure For DC Power Supply."
 3. page E-2-2 from "Breadboard Circuits For Practical Experiments"
 4. page E-2-3 from "Breadboard Circuits For Practical Experiments"
 5. the written quiz for "Practical Electricity."

Place these five forms in the envelope provided. Send in the envelope to the Instruction Department for grading.

To avoid delays, DO NOT include correspondence to other departments in your lesson shipment.

You will complete the remainder of the breadboard circuit experiments when you receive the shipment containing the semiconductor electronics and electronic shutter lessons.

Practical Electricity - Addendum

Study Procedure and Practical Assignment

The original NatCam lesson Practical Electricity contained a breadboard and components for experimenting and a DIY DC Power Supply Kit, the student would build the DC Power Supply and test the device, submitting answers to the test questions while keeping the DC Power Supply for the students own use going forward.

There are some inexpensive DC power Supply kits from Amazon, eBay and others available online as well as an Experimental Breadboard and the components listed in the lesson text.

This Practical Assignment is of course optional, however I highly recommend performing the breadboard experiments, as for the DC Power Supply you can build one or purchase one, I myself upon completion of the course purchased a DC Power Supply from Radio Shack, there are so many available online I suggest doing some research before purchasing one.

You can complete the assignment by submitting answers using any DC Power Supply you happen to have.