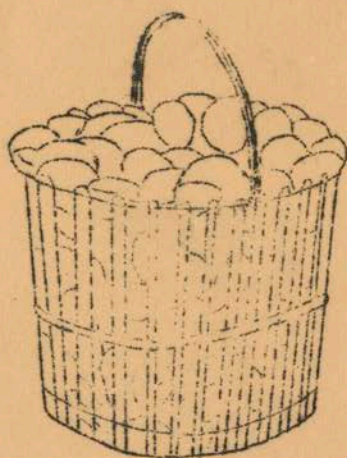
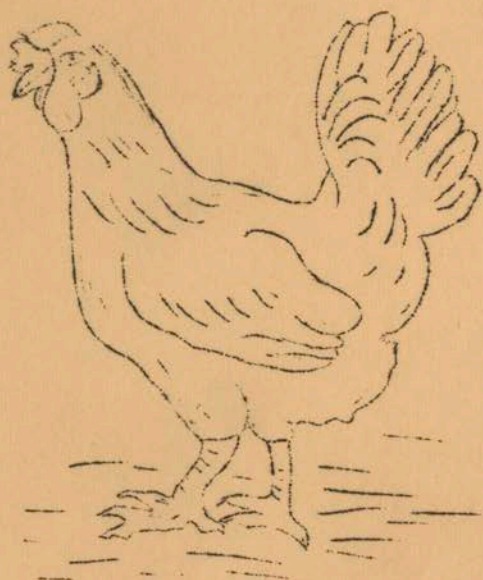
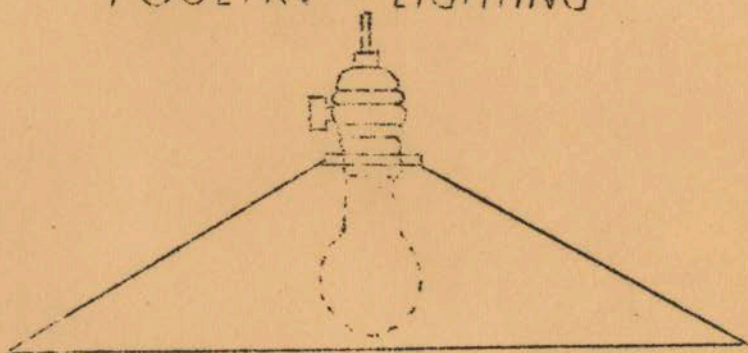


POULTRY LIGHTING



Virginia Agricultural and Mechanical College and Poly-
technic Institute and the United States Department
of Agriculture, Cooperating
Extension Division, Jno. R. Hutcheson, Director
Blacksburg, Virginia

SUGGESTIONS FOR THE USE OF LIGHTS IN LAYING HOUSES

by

Departments of Agricultural Engineering and
Poultry Husbandry, V. P. I.

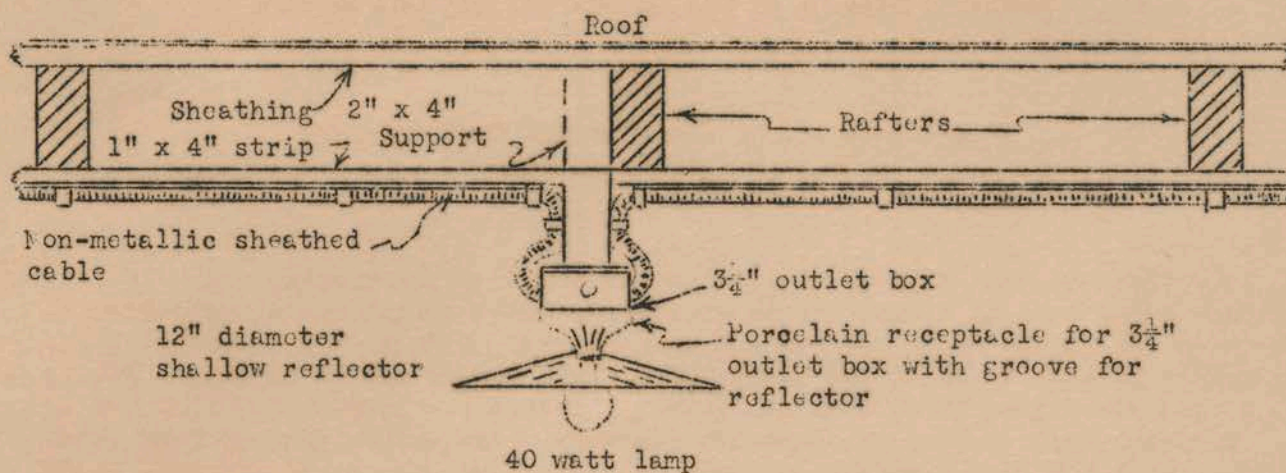
Extensive research has shown definitely that the use of artificial illumination in the laying house will increase the number of eggs layed during the fall and winter months. The total number of eggs layed during the year is not increased by the use of lights, but since the price of eggs is higher in the fall and winter, artificial lighting has been found profitable and is being used by many poultrymen. Kerosene lanterns are used in some sections where electricity is not available, but the use of electricity for this purpose is more economical and more satisfactory.

The two most common systems of lighting are: the bright morning and the dim all-night light. With the bright morning light, the common practice is to use two 40-watt bulbs for every 400 square feet of floor space or for each 100 to 120 hens. The time of turning these on will vary with the time of the year. The birds should not have more than 12 or 14 hours of light, and the time of turning the lights on should vary with the length of the day. The usual practice is to turn the lights on between four and five o'clock in the morning. With the dim all-night system, one 10 or 15-watt electric bulb furnishes ample light for a 20 x 20 foot pen accomodating 100 to 120 layers.

Both systems of lighting have been found more helpful in continuing the production of old hens and bringing into production late or slow developing pullets.

With either system, additional grain should be fed. With bright morning lights, one may place grain in the hoppers or scatter it in the litter at night. This is especially desirable where an alarm clock is used to turn on the lights. When all-night lights are used, some grain may be placed in hoppers or in the litter late in the evening.

According to the Ohio Experiment Station, all-night lights did not effect fertility or hatchability of eggs.

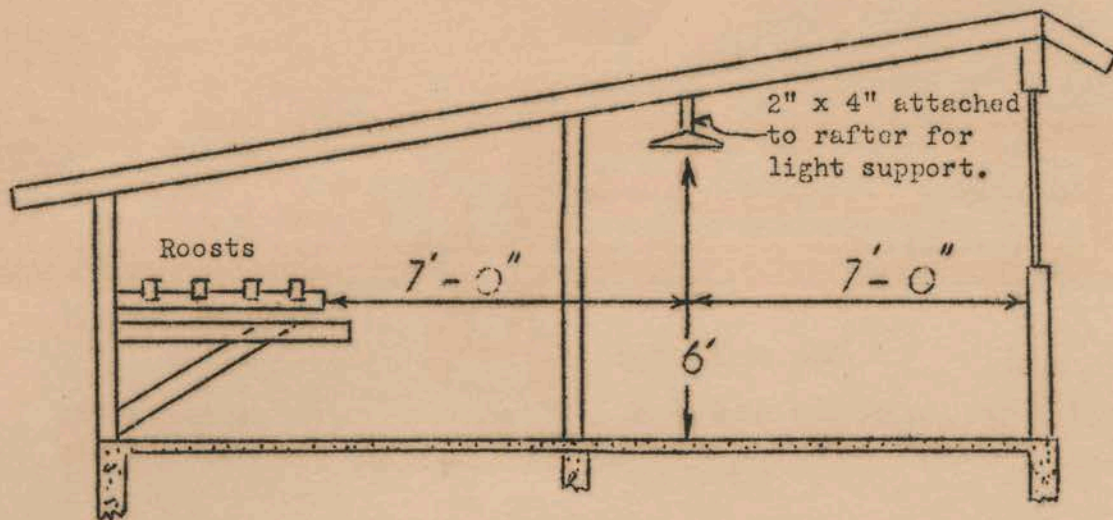


DETAIL OF POULTRY LIGHT INSTALLATION

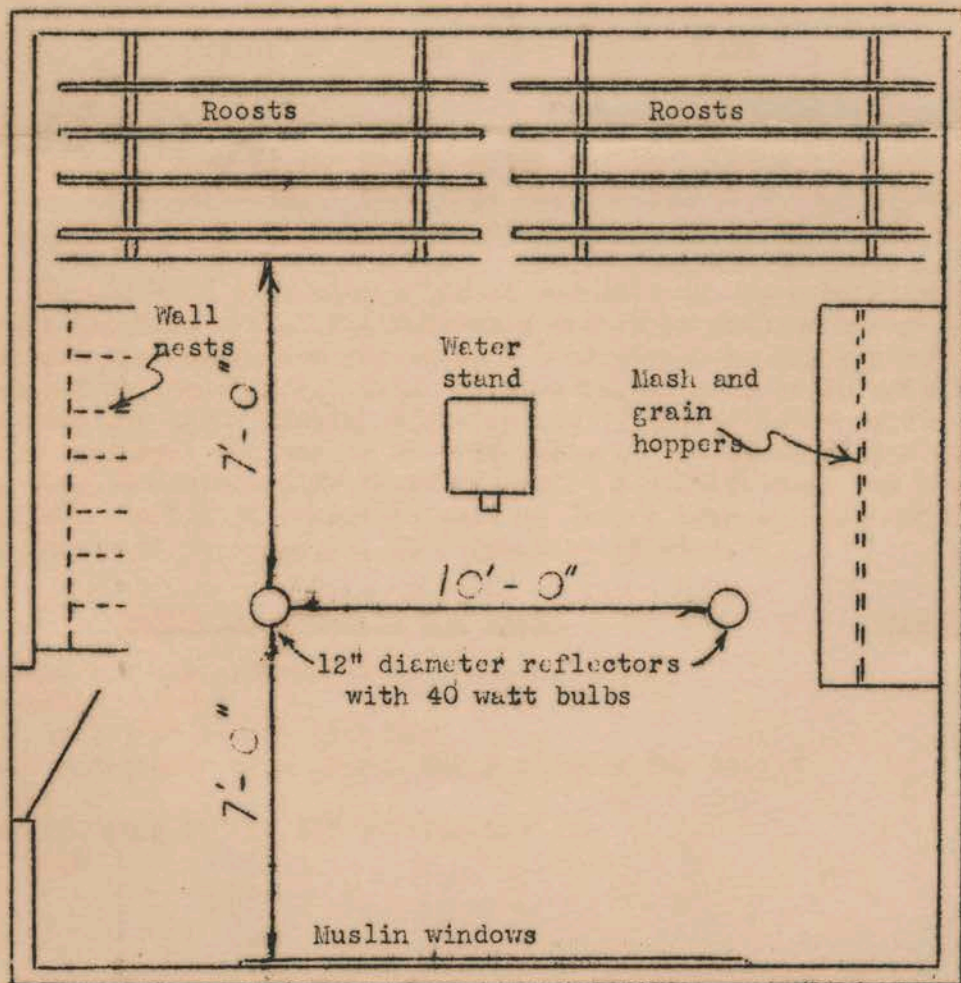
Lights should be located approximately six feet above the laying house floor and half way between the front of the building and the roosts or dropping boards. (See sketches). For early morning lighting, the lights should be ten feet apart and for all night lighting they may be spaced 20 feet apart.

The use of a reflector makes it possible to use a smaller bulb and hence lowers lighting cost. The reflector should be shallow enough to throw light over all the roosts and should be either aluminum, white porcelain or white enameled on the inside. Using reflectors, 40 watt or 50 watt bulbs should be used for early morning lighting and if no reflector is used, 75 watt bulbs are necessary. The use of 15 watt bulbs is satisfactory for all night lighting. No. 14 non-metallic sheathed cable is satisfactory for houses up to 60 ft. long and No. 12 should be used in larger houses. All outside wiring should be done with at least No. 10 weather proof wire.

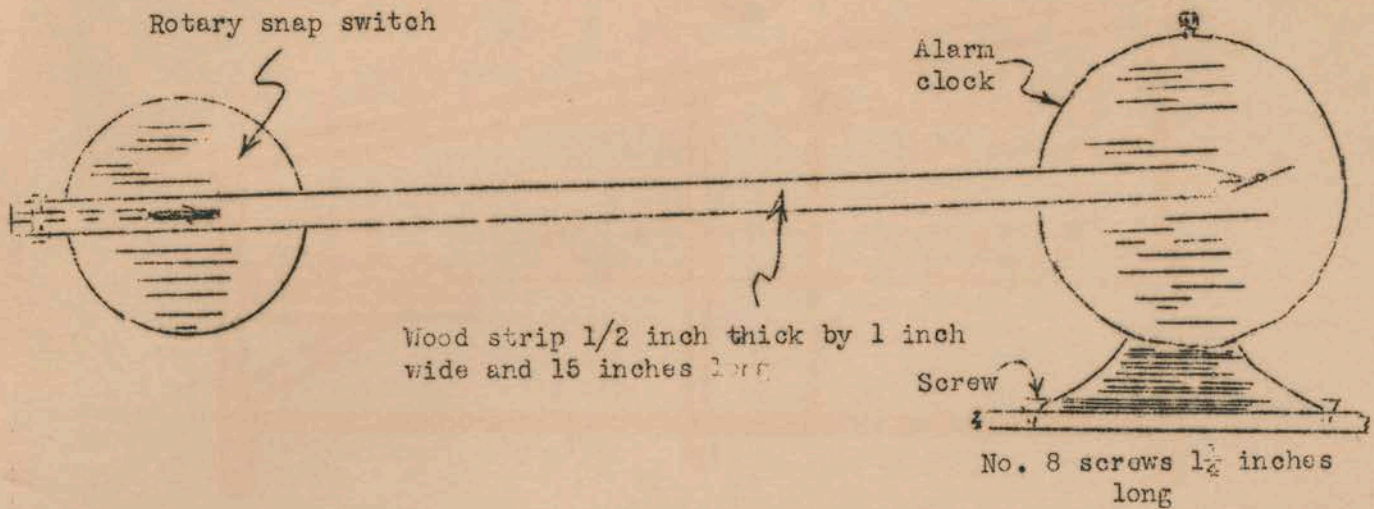
<u>Materials Required Per Light</u>	<u>Approx. Cost</u>
10 ft. No. 14 - 2 wire non-metallic sheathed cable	.30
6 cable mounting clamps	.01
1 - 3-1/4" by 1-1/2" deep outlet box	.10
1 porcelain receptacle with groove for reflector for 3-1/4" outlet box	.15
1 shallow reflector 12" to 16" in diameter	.50
1 40 watt bulb	.13



CROSS SECTION



PLAN



ONE METHOD OF USING AN ALARM CLOCK
FOR TURNING ON LIGHT SWITCH

The above sketch illustrates a simple method of using an ordinary alarm clock for turning on poultry lights. The following procedure may be used in making the installation. Provide a shelf at least 8 inches long and 2-1/2 inches wide for supporting the clock. If the clock has a continuous base, it can be held in place by placing two No. 8 flat headed wood screws at each end of the clock base so that the clock will just slide between the screws. The rotary snap switch should be located fifteen inches from the alarm winding handle and should be installed so that the switch handle is in a horizontal position when the switch is off. A piece of oak or poplar wood one-half inch thick, one inch wide and eighteen inches long is then cut as shown above. Saw a slot 3" long in one end just wide enough for the switch handle to slip into it and insert a stove bolt through the end of the stick so that it can be clamped on the switch handle.

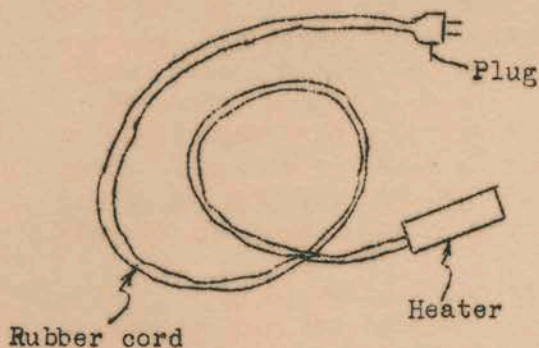
In operation, the alarm is set to go off at the time the lights are to come on and the winding handle is left in the position shown. The end of the wood stick is then placed on the alarm handle. When the alarm goes off the stick drops and as it drops, it turns on the switch. Care must be taken to see that the stick can swing freely when it drops from the alarm handle.

Time switches can be bought commercially at from \$2.75 to \$10.00 from a number of sources among which are: Sears Roebuck & Company; Lyon Electric Company, San Diego, Cal.; and Trumbull L. Co., Plainville, Conn. The Agricultural or Rural Service Engineer of the local electric service company will be glad to give additional information on how to install poultry lighting equipment.

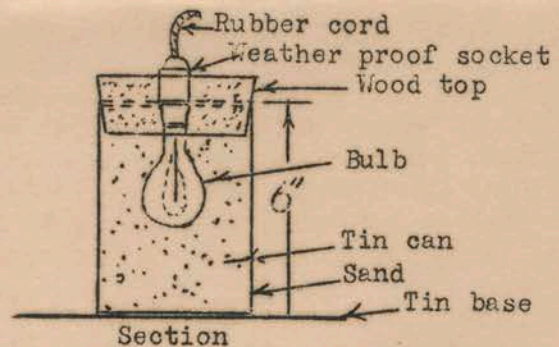
POULTRY WATER WARMERS

Chicken eggs contain about 65% water and therefore it is necessary that hens have plenty of drinking water available at all times for maximum production. During the cold winter months there are times when this water is not available to the hens, even though it might be in the building, due to freezing. Many types of both commercially made and homemade low cost water warmers have been designed to eliminate the problem of water freezing. These water warmers are inexpensive and cheap to operate since they need be used only when the temperature is below freezing.

Tests at the Indiana Agricultural Experiment Station proved the value of electric water warmers in poultry houses and found that the simple immersion type heaters were probably most efficient and desirable. The immersion type heater consists of a heating element of 30 to 60 watts enclosed in a metal sheathing with a water-proof rubber cord to the power outlet. The automatic heaters have a small thermostat built in with the heating unit. These heaters cost from \$1.50 to \$5.00, depending on size and whether or not they are automatic. They can be purchased at hardware stores and poultry supply houses.



Typical Immersion Water Warmer



Homemade Water Warmer

Several designs for homemade water warmers have been worked out, one of which is illustrated above. This type uses a 25 or 40 watt bulb for the heating element. Plans for building the homemade water warmer are included in Virginia Agricultural Experiment Station Bulletin #306, which is available free.

