

MATERIALS, EQUIPMENT, AND ORGANIZATION FOR
BRIDGE PAINTING

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In this paper, I shall confine myself to work as carried on in Greene County during the time I have been connected with the county highway department.

In the years prior to 1933, county bridges had been painted in various ways: sometimes by contract, sometimes by a crew of two or three men hired by the county highway superintendent, and in a few cases, by some of the regular highway forces. The quality of paint and the quality of work done are unknown, except in some cases where we found evidence of untouched parts, usually places not ordinarily noticed, yet very important places to be kept protected from corrosion.

During August, 1933, we did our own first bridge painting. Two bridges, 85-foot spans, were thoroughly cleaned and painted. On these bridges, we employed two painters who had been out of work for some time. They furnished their own tools and equipment and worked on an hourly rate of 50 cents per hour. The county furnished the paint. The total cost on these two bridges was \$60.00. Forty-five gallons of asphalt paint was used. Labor costs totaled \$39.00.

Later in the year, we organized a bridge crew under CWA consisting of one foreman, who was also a painter, two extra painters, and seven laborers. One of these men had a light pick-up truck which he used to transport the equipment and materials, the county furnishing his gasoline. The equipment consisted of paint brushes, wire brushes, scrapers, and a swinging scaffold which the men made out of lumber furnished by the county.

This project was approved for 2,700 man-hours and all labor was paid by CWA. During this period twenty-nine bridges were painted, all low truss type, ranging from 30 feet to 120 feet. Three hundred gallons of asphalt paint were used, twenty-four gallons of white paint, and sixty gallons of thinner. The total cost for paint and equipment was \$263.00. The total cost of labor to CWA was \$1,840.00.

In all new painting, we have used hand cleaning and hand painting with brushes. With CWA and, later, WPA labor being plentiful, we have never equipped our department with power cleaning and spraying equipment. Should the time come when these men will find employment elsewhere, then we would feel justified in using such equipment.

On the CWA project, we used an asphalt paint that meets federal specifications, T-T-V57. It has a non-volatile content of 40%. It sets to touch in five hours, dries hard in twenty-four hours, and will withstand rapid bending on an 1/8-inch rod, and cold water after eighteen hours. The white paint used for

rail and end posts was a good quality of outside white lead and oil paint. After the surface was cleaned, one coat of asphalt was applied. The rail and end posts were given two coats of white. This gave us a very satisfactory job.

In addition to getting these bridges cleaned and painted, we found out things about them that might ordinarily have been overlooked. Some parts, after the scale and rust were removed, disclosed weakened members. In fact, some parts were eaten through and needed repairs badly.

Since the closing of the CWA project, we have limited our painting to bridges on which repairs are being made. If a wood floor is being replaced, the working crew cleans and paints the joists, floor beams, lower chords, batter posts and shoes, if a truss bridge, and the I beams, if it happens to be a beam bridge. We have also changed our paint, and are now using a rust inhibitive red paint which has given us good results. This paint contains 55% pigment and 45% vehicle of the following ingredients:

<i>Pigment</i>	<i>Vehicle</i>
Iron Oxide25.4%	Drying and penetrating oils80%
Lead oxide13.3%	Dryer 5%
Zinc chromate 4 %	Penetrating mineral thinner15%
Mag. silicate38.4%	
Silicon dioxide18.9%	

For rails and end posts, we now use an aluminum paint composed of 21.4% aluminum paste and 78.6% vehicle which is covered by federal specifications, T-T-V81.

We have found that it is not necessary to have expensive equipment to get a good job of bridge painting on smaller bridges on the county highways. Care must be exercised in cleaning and seeing that no surface is overlooked, however inaccessible it may seem. Tools and brushes can be improvised that will go into almost any corner and do the job.

It is of the utmost importance that the foremen on the job be particular about getting a first-class job, rather than pride himself on the amount of work that he can turn out, although the latter qualification is also desirable.

SCREENING AND CRUSHING PLANTS

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The equipment we use in Jefferson County in screening and crushing material for surfacing county roads consists of single-unit, portable stone crushers of approximately 100 to 125 cu. yd. capacity per eight-hour day. This output depends upon the size of material crushed and the condition of the stone when crushed. As you know, wet stone, or stone with earth in