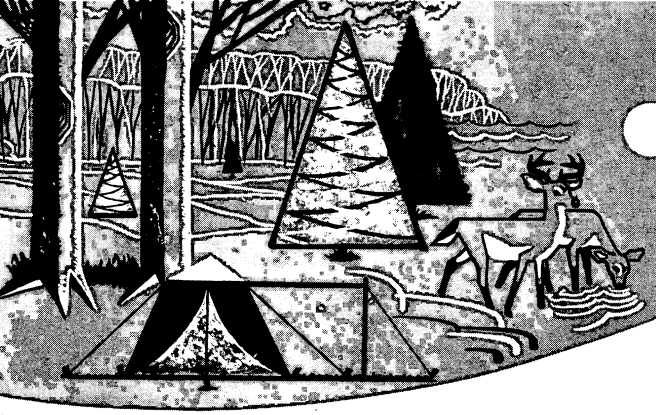

Research Note NC-208

NORTH CENTRAL FOREST EXPERIMENT STATION, FOREST SERVICE — U.S. DEPARTMENT OF AGRICULTURE

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AN EASY-TO-MAKE SHELTER FOR THE TRIPLE BEAM BALANCE USED AT FIRE WEATHER STATIONS

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ABSTRACT.--Describes how to build a housing for the balance used to weigh fuel moisture sticks. The housing is easy to build, low-cost, and can be mounted on the supports of the standard cotton region shelter.

OXFORD: 431.2--015.7. KEY WORDS: fire-danger-rating, fuel moisture sticks.

The National Fire Danger Rating System requires fuel and weather measurements to determine forest fire potential.[1] One of these measurements is the weight of fuel moisture sticks usually made with the aid of a triple beam balance. Unfortunately the balance is often housed in the cotton region instrument shelter or kept in the observer's office in lieu of constructing the somewhat elaborate, recommended balance-shelter. These practices can lead to serious measurement errors.

To reduce the chance for error, we have devised an inexpensive (about $15) housing for the balance that is easy to build and can be mounted on the supports of the cotton region instrument shelter (fig. 1). This design eliminates an additional installation and removes one possible shade source for the fuel moisture sticks. This balance housing can be made from 5/8-inch exterior plywood or 3/4-inch lumber. It has a plexiglas window across the front to facilitate readings on windy days (fig. 1).

The shelter is 36 inches long, 8 inches wide, and 10 inches high (fig. 2). Construct as follows:

1. Cut all wood parts.
2. Paint parts with an oil base primer.
3. Seal the predrilled plexiglas window on the inside with caulking compound and then screw it in place with #6 by 1/2-inch round head wood screws.
4. Glue and nail the box together with galvanized six penny box nails.
5. Finish with white exterior enamel house paint.
6. Attach brass hinges and hasp.
7. Bolt to instrument shelter supports in level position, facing south 4 inches below floor of instrument shelter (fig. 1).

[1] *J. E. Deeming, J. W. Lancaster, M. A. Fosberg, R. W. Furman, and M. J. Schroeder. 1972. The National Fire Danger Rating System. USDA For. Serv. Res. Pap. RM-84, 165 p. Rocky Mt. For. & Range Exp. Stn., Fort Collins, Colorado.*

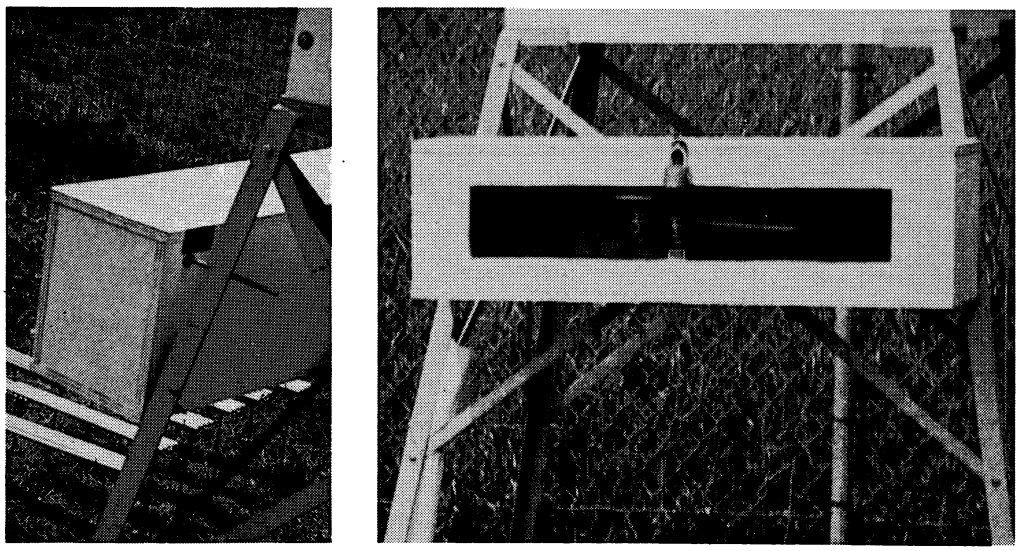

Figure 1.--*Mounting arrangement for balance shelter (left) and front view of balance shelter (right):*

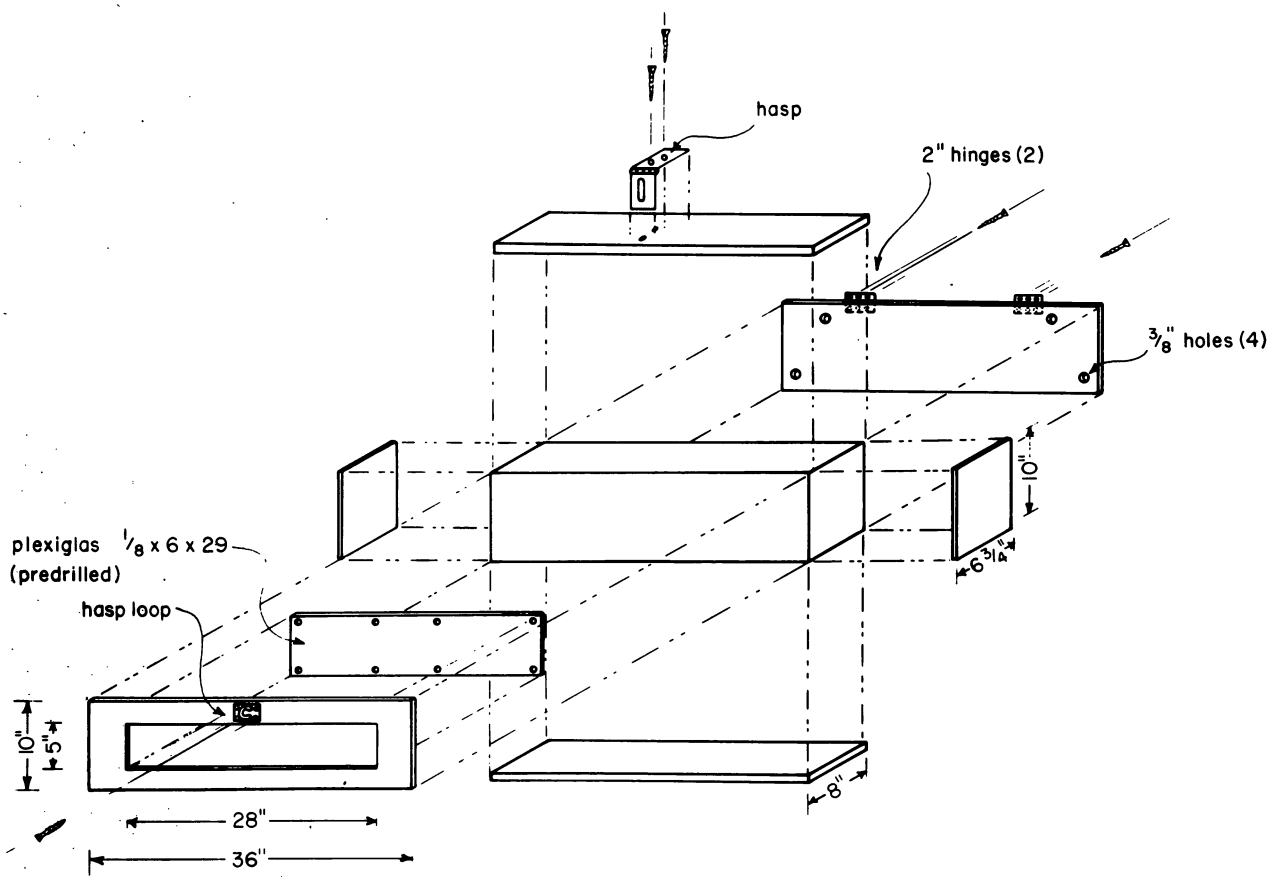

Figure 2.--*Diagram of shelter construction.*

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