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# A MODIFIED RESTRAINING DEVICE FOR MOURNING DOVES

KEVIN PATTERSON, CRAIG A. HASKELL, AND JOHN H. SCHULZ
*Missouri Department of Conservation*
*Fish and Wildlife Research Center*
*1110 South College Avenue*
*Columbia, Missouri 65201 USA*

Abstract.—To economize personnel and reduce time spent handling Mourning Doves (*Zenaida macroura*), an existing restraining device used for Northern Bobwhites (*Colinus virginianus*) was modified. The device was constructed of wood, screws, rubber bands and metal paper-clips. Directions for construction are given. Over 500 Mourning Doves were banded and radio-marked during 1992 using the restraining device. Only one person was needed to band and mark doves. The device reduced the amount of time spent handling each bird thereby potentially reducing capture related trauma and feather loss.

**UN APARATO PARA RESTRINGIR A INDIVIDUOS DE *ZENAIDA MACROURA***

Sinopsis.—Para economizar tiempo y personal manejando individuos de la tórtola *Zenaida macroura* se modificó un aparato previamente utilizado para restringir el movimiento de individuos de codorniz (*Colinus virginianus*). El aparato fue construido con madera, tornillos, bandas elásticas de goma y presillas de metal. Más de 500 tórtolas fueron restringidas con el aparato previo a ser anilladas, y en un gran número de veces para colocarles radiotransmisores. Una sola persona fue necesaria para restringir, anillar y marcar a las aves. El aparato redujo el tiempo de manejo de cada tórtola, reduciendo la pérdida de plumas en las aves y el trauma relacionado con la captura.

A major concern in avian field studies is efficient and economical banding and/or marking of birds with a minimum of stress. Circumstantial evidence for Mourning Doves (*Zenaida macroura*) indicates the risk of capture myopathy increases with increased handling time (R. Windingstead, pers. comm.). Also, since the 1985 Supreme Court clarification of the Fair Labor Standards Act (Ginsburg and Abrahams 1987) some biologists in the United States have to manage field personnel more efficiently due to the non-professional 40-h work week. Equipment and techniques that save time and reduce stress to birds are critical to the success of avian field projects.

Many restraining devices are currently used in avian research (Evans and Kear 1972, Ferguson-Schreiber 1976, Fuller 1975, Lattal 1968), but these devices are not useful for attaching back-mounted radio transmitters

because they surround or cover the back of the bird. Some restraining devices may facilitate attaching patagial tags (Bolen et al. 1977, Seel 1974, Williams 1969) but do not allow the attachment of both patagial tags and radio transmitters.

We trapped and marked Mourning Doves during 1990–1992 in conjunction with a pilot study for the Central Management Unit Technical Committee for Migratory Shore and Upland Game Birds. During the first 2 yr of the study, 780 Mourning Doves were fitted with U.S. Fish and Wildlife Service leg bands; 625 of the 780 received radio transmitters or patagial tags in addition to leg bands. During these years, two people were needed per bird to attach radio transmitters or patagial tags: one to attach the marker and one to hold the bird. Even though data on amount of time spent banding/marking doves were not collected during 1990 and 1991, we estimated that 10–12 min were required per bird.

In 1992, we modified an existing restraining device for Northern Bobwhites (*Colinus virginianus*) (DeMaso and Peoples 1993) to handle Mourning Doves. The restraining device prevents a bird from using its legs to push off prior to flight. Although DeMaso and Peoples used spring-operated clothes pins to immobilize Northern Bobwhite legs, we found that spring-operated clothes pins may damage the smaller and weaker legs of Mourning Doves. Instead, we used a rubber band stretched between two eye-screws and bent paper-clips to secure the dove's legs.

Construction of the restraining device was similar to the device designed by DeMaso and Peoples (1993) with two exceptions: the size of hole and the method of holding the legs securely. The modified restraining device for Mourning Doves was constructed of either 1.9-cm plywood or similar wood product. The top dimensions were 30.5 × 12.7 cm (Fig. 1). A 2.5-cm hole was cut in the center of the top board. The sides of our device were 30.5 × 12.7 cm, and were glued and screwed to the top board with butt joints. Optional triangular braces may be attached to the inside surfaces of the top and sides. Three other boards were 30.5 × 1.9 × 1.9 cm and were attached to the bottom of the sides providing two legs and a bottom support. We found that the hole in the top board and height of the side boards were the most critical dimensions. The 2.5-cm hole allows the bird's legs to be easily passed through while still supporting the bird and the 30.5-cm high side boards allowed ample room for banding.

The eye-screws in the side boards were placed approximately 7.6–10.2 cm from the top board and a 1.0-cm wide rubber band was stretched between the eye-screws. Two standard metal paper-clips were bent open to resemble an "S" shape. The smaller ends of the clips were attached to each half of the rubber band directly below the hole in the top board. The upper portions of the paper-clips were bent to resemble a "shepherd's crook" to prevent damage to the dove's metatarsus. It was unnecessary to pad the paper-clips.

To use the restraining device, a dove's legs were placed through the hole in the top board parallel to the rubber band. The paper-clips were hooked dorsal to the hallux of each leg and pulled in a downward motion until the dove's legs were at approximately 90 degrees. If the dove's legs

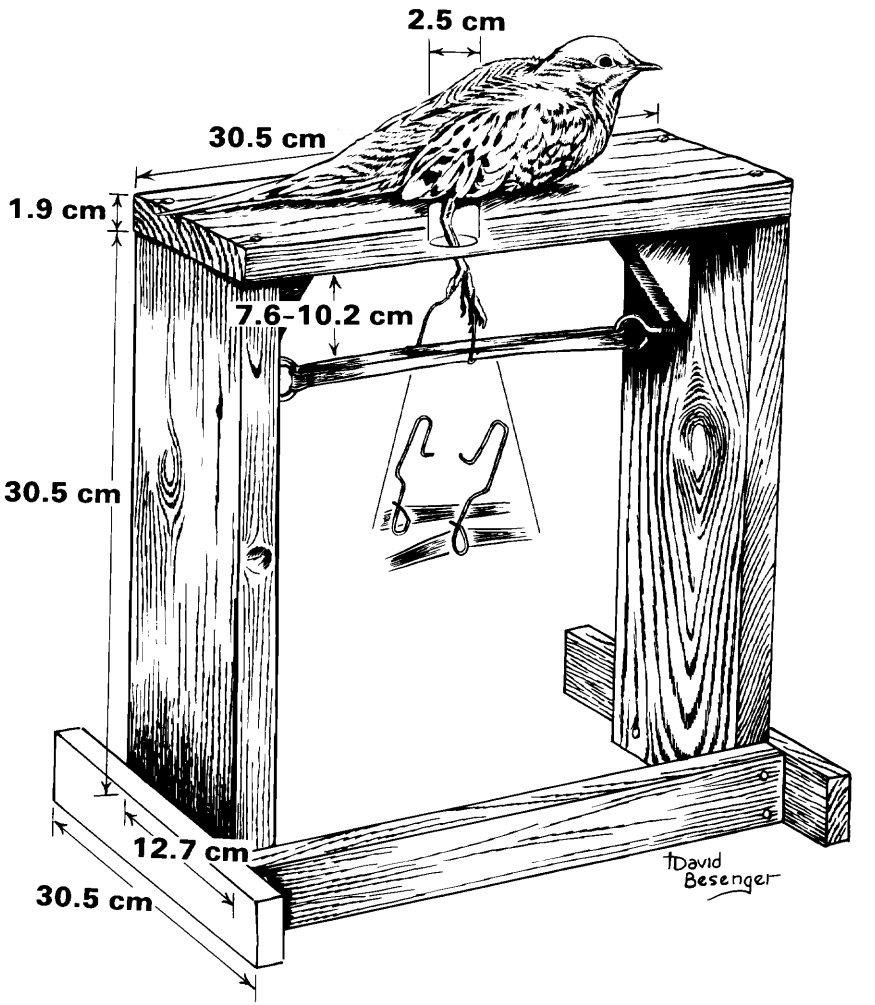


FIGURE 1. Schematic diagram of a restraining device for Mourning Doves.

were not securely held, the eye-screws would be moved to a lower position on the side boards or the eye-screws placed deeper into the wood. The bird is secured in the device with only the modified paper-clip and the associated rubber band. This allows easy access to all external surfaces of the bird except the lower breast and abdomen.

We used the modified restraining device to band and mark over 500 Mourning Doves in 1992. Using the restraining device, only one person was needed to band and radio mark Mourning Doves, and the amount of time spent handling and marking doves was reduced to about 5–6 min per capture.

We did not test for differences in survival between birds marked with

the device and without. We believe, however, that handling birds with the device is less intrusive due to the decreased handling time and decreased feather loss because birds were not held in the hand. In addition, doves in our restraining device were unexplainably docile with few exceptions. Restrained doves allowed investigators to attach bands, radio transmitters and examine wing plumage without struggling. We believe the potential increase in survival and the unexplainable docile behavior exhibited by the birds warrants further investigation.

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