

# OFFICE MEMORANDUM



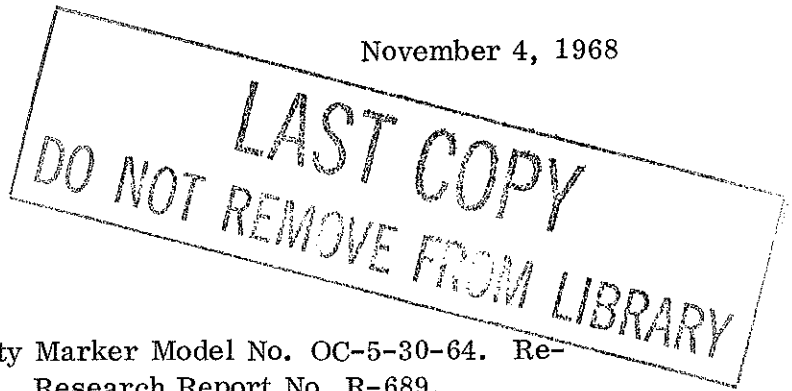
MICHIGAN  
DEPARTMENT OF STATE HIGHWAYS

November 4, 1968

To: L. T. Oehler, Director  
Research Laboratory Section

From: G. M. Smith

Subject: Evaluation of Octopus Safety Marker Model No. OC-5-30-64. Research Project 68 NM-198. Research Report No. R-689.



In January 1967, Octopus Safety Markers, manufactured by A. G. Vara and Son, Hamburg, New York, were field tested by the Maintenance Division. They concluded that the marker was generally inadequate. R. G. Stockmeyer, field supervisor, commented, "With vehicles in a continuous string the draft of air caused by them will keep the flag laying flat on the pavement. When used with intermittent traffic which is moving at high speed the whole unit will skid along pavement. Storage of unit is also a problem." Interest was renewed in the marker after enthusiastic remarks by the Pennsylvania Highway Department and the Pennsylvania Turnpike Authority were reported (Memo to L. T. Oehler from M. H. Janson, July 29, 1968). These markers have been used in Pennsylvania for three years and have found to perform as well or better than traffic cones as delineating devices and far surpass the cones in terms of loss due to traffic. As a result of these findings, octopus markers were submitted to the Research Laboratory on August 6, 1968 for further evaluation.

The marker consists of a fluorescent orange flag mounted on a vertical rod; this is attached to a hub base supported by 5 radial legs which lie flat on the pavement (Fig. 1). A standard MDSH traffic cone is shown for comparison. The flag is triangular, approximately 16 in. wide and 12 in. high. The metal flagpole is a 28 by 1/4 in. rod with its bottom end inserted in a 3-in. long rubber tube attached to a bolt through the base hub. The hub is composed of two 2-1/2-in. diameter rubber disks with the ends of the legs sandwiched between them. The bolt holding the flagpole to the base hub also holds the ends of the legs. The legs are 17-1/2 by 3/8-in. diameter coiled springs. The coils are 0.065 in. wire.

The Octopus Safety Marker was evaluated by comparing it with a fluorescent plastic traffic cone currently used by the MDSH.

Two observers determined the visibility distance for the flag and the cone. Both the distance at which each device could be seen as a point of color contrasting with the pavement and the distance at which, in the opinion of the observers, it could be recognized as a traffic marker were measured. These values for visibility distance are given in Table 1.

Perhaps the cone can be recognized at twice the distance of the Safety Marker because of its familiar shape and larger size.

The target area of the flag is 96 sq in. while that of a cone is 135 sq in. For this test the entire area of the flag was exposed to the observers. This might not be the case under actual circumstances.

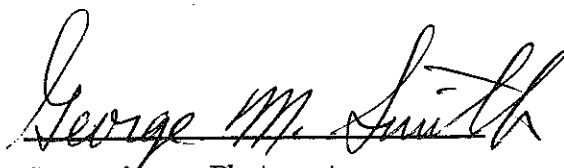
Attempts to up-end either the Octopus Safety Marker or the cone by driving by a row of each type of traffic marker with a step-van at 55 mph were unsuccessful. Tests with the step-van wheels passing over the legs of six of the Octopus Safety Markers at 50 mph resulted in none of the markers tipping over. Two of them moved laterally 6 in. from the vehicle path. It was impossible to run over the base of the traffic cone because the fenders hit the cone before the wheels could contact the base.

Running over the Octopus Safety Markers with the step-van at 30 mph knocked them over. They did not spring upright because the impact with the bumper threw the legs into an entanglement nullifying any leverage for righting the flagpole.

The Octopus Safety Markers are more difficult to store than cones. They must be folded and inserted, using both hands, into 3-in. diameter metal or cardboard cylinders whereas cones may be simply stacked.

Arrangements were made with Pete DeCamp to evaluate the field performance of a dozen markers transmitted to Traffic Field Services on October 22, 1968. One of their crews will use the markers on a field project and report their performance at a future date.

TESTING AND RESEARCH DIVISION



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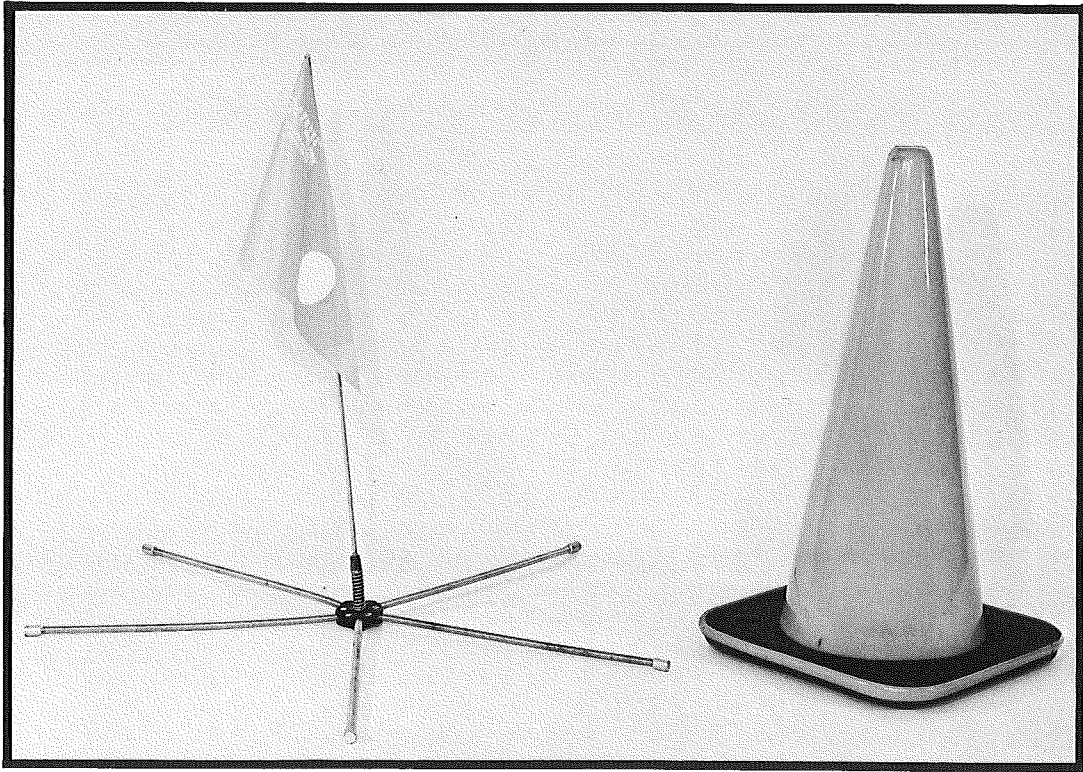


Figure 1. Octopus marker and MDSH Cone.

TABLE 1  
VISIBILITY DISTANCE

	Visibility Distance, ft	
	First Sighted	Recognized as Traffic Marker
Octopus Safety Marker	2,890	980
MDSH Cone	3,170	1,980