



Report Title		Report Date: 2000
CB Wizard Alert System		
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Supplemental Notes		
Abstract The CB Wizard was deployed on a sub-urban Interstate north of Wichita, in advance of a lane closure. Lane distribution data were collected at several distances from the taper to determine if vehicles changed lanes earlier due to hearing the warning message broadcast by the CB Wizard. System deployment and use was quick and easy. No changes were observed in lane distributions, so the effectiveness of the device could not be statistically verified.		

WIZARD CB ALERT SYSTEM

Highway Technology/Trafcon Industries, Inc

Evaluation Team

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Description

The Wizard CB Alert System, a trailer-mounted CB alert system that broadcasts a recorded message to all CB-equipped motorists, notifying them of upcoming road and traffic conditions, was installed near the south end of the project to provide advance notice to northbound CB-equipped traffic of the upcoming road and traffic conditions.

Study site

I-135, from the Harvey/Sedgwick County line north to 0.3 miles south of the South K-15 interchange, Harvey County

South end of project near the 125th Street interchange and the northbound mainline crossover to the southbound lanes.

Performance Measures

The objectives of this application and the associated performance measures are shown in Table 3-19.

TABLE 3-19 Wizard CB Alert System: objectives and performance measures.

Objectives	Performance Measures
Provide advance warning	1. Lane distribution of trucks upstream of the project 2. Truck speeds upstream of the project

Experimental Design

Study type: Before and after

Data Collected

Lane distribution of trucks at locations 500 ft, 1000 ft, and 1500 ft upstream of taper

Collection method: pneumatic tubes and automatic traffic recorders.

Sample size: one 24 hr day before and one 24 hr day after installation.

Analysis technique: comparison of lane distributions before and after installation.

Speed of vehicles upstream of taper

Collection method: pneumatic tubes and automatic traffic recorders
Sample size: one 24 hr day before and one 24 hr day after installation.
Analysis technique: comparison of 85th percentile, average and pace speeds before and after installation.

Special Notes

Equipment difficulties resulted in only one hose on each counter being utilized. Consequently, speed data could not be derived from the raw data. Further difficulties resulted in corrupted data for the 1500 ft collection point.

A software utility was developed to derive vehicles from the data, thus lane distributions were available for the 500 ft and 1000 ft collection points.

Lane distributions were calculated for one-hour periods by vehicle classification (*passenger car* and *other*). Data were analyzed using the percentage of vehicles in lane 2 (closing lane).

Evaluation Results

The system was easily set up. The trailer mount allows for a high degree of portability, and the use of CB frequencies does not require an FCC permit, unlike traditional highway advisory radio (HAR) (meaning that HAR cannot legally be mobile).

During the test runs, the warning message was not detected. Later investigation revealed that the CB receivers being used for testing were not operating properly.

No change occurred in the percentage of vehicles in lane 2 in any of the analyses, including passenger cars and trucks during both daytime and darkness. Summaries of the data collected 500 ft upstream of the taper are shown in Table 3-2, found in the section addressing the Interplex Solar Powered Lighted RPMs. Because there were no statistically discernable changes, Table 3-2 shows a comparison of the baseline data with data collected while both the Interplex Solar RPMs and the Wizard CB Alert System were in operation.

Conclusions

The traffic volumes experienced at the test site at night were low. The terrain was level and the visibility was excellent. Under such conditions the demands on the driver are few and lane change maneuvers are simple. Consequently, there was little need for improvements to the traffic control measures commonly used at such sites.

The collection of data at distances upstream of the taper of 500 ft or more may have been too far removed to capture lane change patterns.

Recommendations

The Wizard CB Alert System is designed to take advantage of the huge installed base of CB radios, particularly among heavy vehicles. While its effectiveness could not be verified from the data collected during this evaluation due primarily to equipment difficulties, the device is intuitively an excellent means of providing commercial vehicle operators advance warning of unusual highway and traffic conditions. Accordingly, KDOT is considering the purchase of at least one system.