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TITLE	Project Site Leadership Role in Improving Construction Safety
RESEARCHER	William F. Maloney Center for Innovation in Construction Safety and Health Research Virginia Tech Research Report: March 2010
OBJECTIVE	The purpose of this study was to determine the relationship between construction site leader behavior and construction project safety performance.
METHODOLOGY	Thirty-one projects participated in the study. Each supervisor/leader and their subordinates completed five scales: Leadership Practices Inventory, Safety Values (Zohar, 2002), Safety Priorities (Zohar, 2002), Safety Climate (from Geller, 2000 and Cooper 1993), Safety Leader Behaviors (author-generated); and provided demographic information. The Recordable Incidence Rate and the Lost Time Incidence Rate were used as objective measures of safety performance. Peers and superiors only completed the Leadership Practices Inventory – Observer form. Survey participants were asked if they preferred the English or Spanish version. A total of 1045 responses were obtained from supervisor/leader and their subordinates and 2198 responses were obtained for the leader behavior only questionnaire (a total of 3243 responses for leader behavior). In this study Cronbach alpha for the LPI scales were .88 Modeling, .88 Inspiring, .77 Challenging, .83 Enabling, and .88 Encouraging.
KEY FINDINGS	The most frequent leadership behaviors were Model and Enable, followed by Encouraging, and the Inspiring and Challenging.

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Generally, the five leadership behaviors were consistent throughout the project hierarchy (position) and did not vary systematically by age group. The five leadership practices were significantly correlated with leader safety values, safety priorities and worker perception of management commitment to safety but not individual safety or task accomplishment. All five leadership practices significantly increased perceptions of positive coworker relationships and supervisor involvement, while Encourage the Heart significantly increased perceptions of situational awareness.

The correlations for leadership behaviors with recordable incidence rate were not statistically significant. The author suggests that “adding additional projects will increase the likelihood of obtaining statistical significance. Similarly, the limited variance in the recordable incidence rate is a contributing factor in the lack of significance” (p. 55).

The five leadership scales, and the safety leader scale, were regressed against the recordable incidence rate as the dependent variable, and statistically significant, accounting for over 33 percent of the explained variance (R^2). Most of this was accounted for by Enabling and Modeling and using these two leadership practices alone accounted for 31% of the explained variance. However, unexpectedly, the relationship for Modeling was negative and the author suggests that there may be methodological problems in the interpretation of these findings, especially because “Recordable Incident Rate and Lost Time Incident Rate are inappropriate measures of safety performance for determining the impact of site leadership. The frequency and number of incidents is insufficient to assess impact” (p. 60).