**Deterioration Prediction of RC Handrails
Considering the Variety of Damage Factor**

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The various kinds of deterioration factors caused by environment have affected the behavior of RC structures. This study investigated the RC handrails having been used for 25 years or more to obtain the statistical data: the cover depth of reinforcement bar, quantities of carbonation and initially-induced chloride ion. We performed "the Monte Carlo simulation" as the deterioration prediction in order to overcome the problem of the variety in damage factors. The investigation indicated that a predominant factor on the deterioration rate of RC handrails was the cover depth. The simulation predicted that approximately 10-30% of the cover in the RC handrail would be spall within ten years. The corrosion rate predicted by using "the Monte Carlo simulation" was mostly 50% less than that of in "the Maintenance Standards for Railway Structures and Commentary."