$$
T = \begin{array}{c|ccccccccc}
 & [0,0] & [0,1] & [0,2] & [1,0] & [1,1] & [1,2] & [2,0] & [2,1] & [2,2] \\
\hline
[0,0] & 0.875 & 0.075 & 0 & 0.05 & 0 & 0 & 0 & 0 & 0 \\
[0,1] & 0 & 0.875 & 0.075 & 0 & 0.05 & 0 & 0 & 0 & 0 \\
[0,2] & 0 & 0 & 0.9 & 0 & 0 & 0.1 & 0 & 0 & \\
[1,0] & 0 & 0 & 0 & 0.875 & 0.075 & 0 & 0.05 & 0 & \mathrm{R} \\
[1,1] & 0 & 0 & 0 & 0 & 0.875 & 0.075 & 0 & 0.05 & 0 \\
[1,2] & 0 & \mathrm{Q} & 0 & 0 & 0 & 0 & 0.9 & 0 & 0 & 0.1 \\
[2,0] & 0 & 0 & 0 & 0 & 0 & 0 & 0.85 & 0.15 & 0 \\
[2,1] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0.85 & 0.15 \\
\hline
[2,2] & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1.0
\end{array}
$$