Fix a nonnegative integer $d$, a field $\mathbb{F}$, and a vector space $V$ over $\mathbb{F}$ with dimension $d+1$. Let $T$ denote an invertible upper triangular matrix in $\text{Mat}_{d+1}(\mathbb{F})$. Using $T$ we construct three flags on $V$. We find a necessary and sufficient condition on $T$ for these three flags to be totally opposite. In this case, we use these three totally opposite flags to construct a Billiard Array $B$ on $V$. It is known that $B$ is determined up to isomorphism by a certain triangular array of scalar parameters called the $B$-values. We compute these $B$-values in terms of the entries of $T$. We describe the set of isomorphism classes of Billiard Arrays in terms of upper triangular matrices.

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