

ABSTRACT. We present unpublished work of D. Carter, G. Keller, and E. Paige on bounded generation in special linear groups. Let n be a positive integer, and let $A = \mathcal{O}$ be the ring of integers of an algebraic number field K (or, more generally, let A be a localization $\mathcal{O}S^{-1}$). If $n = 2$, assume that A has infinitely many units.

We show there is a finite-index subgroup H of $\mathrm{SL}(n, A)$, such that every matrix in H is a product of a bounded number of elementary matrices. We also show that if $T \in \mathrm{SL}(n, A)$, and T is not a scalar matrix, then there is a finite-index, normal subgroup N of $\mathrm{SL}(n, A)$, such that every element of N is a product of a bounded number of conjugates of T .

For $n \geq 3$, these results remain valid when $\mathrm{SL}(n, A)$ is replaced by any of its subgroups of finite index.