1049-20-11   **Claire Wladis*** (`cwladis@gmail.com`). *Unusual Geodesics in Generalizations of Thompson's Group.*

We prove that seesaw words exist in Thompson's Group $F(N)$ for $N = 2, 3, 4, \dots$ with respect to the standard finite generating set X. A seesaw word w with swing k has only geodesic representatives ending in g^k or g^{-k} (for given $g \in X$) and at least one geodesic representative of each type. The existence of seesaw words with arbitrarily large swing guarantees that $F(N)$ is neither synchronously combable nor has a regular language of geodesics. Additionally, we prove that dead ends (or k–pockets) exist in $F(N)$ with respect to X and all have depth 2. A dead end w is a word for which no geodesic path in the Cayley graph Γ which passes through w can continue past w, and the depth of w is the minimal $m \in \mathbb{N}$ such that a path of length $m + 1$ exists beginning at w and leaving $B_{|w|}$. We represent elements of $F(N)$ by tree-pair diagrams so that we can use Fordham's metric. This generalizes results by Cleary and Taback, who proved the case $N = 2$. (Received January 05, 2009)