Joseph Kirtland* (joe.kirtland@marist.edu), Department of Mathematics, Marist College, 3399 North Road, Poughkeepsie, NY 12601. A Note on a Class of Generalized Nilpotent Groups Introduced by Bechtell and Doerk. Preliminary report.

All groups are finite with \( \Phi(G) \) denoting the Frattini subgroup of a group \( G \). If \( G \) is nilpotent with subgroups \( H \) and \( K \) where \( H \leq K \), it is well known that \( \Phi(H) \leq \Phi(G) \) and that \( \Phi(H) \leq \Phi(K) \). However, as demonstrated by the symmetric group \( S_3 \), there are non-nilpotent groups that also satisfy these properties. In 1965 H. Bechtell introduced a class of groups which satisfy the property that \( \Phi(H) \leq \Phi(G) \) for all subgroups \( H \) of a group \( G \). About 30 years later K. Doerk introduced a class of solvable groups which satisfy the property \( \Phi(H) \leq \Phi(K) \) when \( H \leq K \leq G \) for a group \( G \). These two classes are identical when restricted to solvable groups. In this short talk, the author will extend the work done by Bechtell and Doerk by presenting some additional properties and structural results concern this class of solvable groups. (Received September 05, 2019)