Potential mechanisms influencing tornadogenesis and tornado maintenance are investigated using idealized numerical simulations. Most tornadoes are accompanied by (sometimes visible) smaller satellite vortex features. The influence of these features on tornadogenesis and maintenance is unclear, given the complexity of interactions and the spatial resolution needed to capture such dynamics. Thus, we employed simplified numerical experiments to examine the generation and evolution of vertical vorticity in the vicinity of idealized structures similar to a rear flanking downdraft (RFD) and a mesocyclone. Using a three-dimensional, nonhydrostatic model, we initialized with a large cylindrical, Rankine vortex, and then inserted a small cylindrical column of relatively cool air, in the “vorticity skirt” region of the large vortex. We also initialized a typical vertical wind profile with a typical curved hodograph. I hypothesized that the downward, spreading motion of the cool air column would create a horizontal temperature gradient and gust front at lower levels. We chose conditions so that the orientation of the gust front boundary would foster development of horizontal shear (vertical vorticity) along its leading edge. As the cool air pool is advected around by the background flow, the convergence along the boundary would cause vertical stretching and strengthening of the existing vorticity. Also, we anticipated that as the cyclonic vorticity strengthened it would be drawn up gradient (and eventually merge into) the initially created background vortex. In addition we hope to further this research by performing a pre and post merger circulation analysis to determine whether the sub vortices will strengthen the system. In general, the hypotheses were confirmed, but there were some unexpected results as well.