The field of mobile robotic systems has become a rich area of research and design. These systems can navigate difficult terrain using multiple actuators with conventional ambulation, by hopping, jumping, or for aerial vehicles, using flapping wings, propellers, or engines to maintain aerial flight. Unmanned Aerial Systems (UAS) have been used extensively in both military and civilian applications such as reconnaissance or search and rescue missions. For air vehicles, range and endurance is a crucial design parameter as it governs which missions can be performed by a particular vehicle. In addition, when considering the presence of external disturbances such as atmospheric winds, these missions can be even more challenging. Meta aircraft technologies is one area of research that can increase range and endurance by taking advantage of an increase in L/D. A meta aircraft is an aircraft composed of smaller individual aircraft connected together through a similar connection mechanism that can potentially transfer power, loads, or information. This presentation explores meta aircraft flight dynamics and controls for a variety of different configurations. First, the dynamics of meta aircraft systems are explored with a focus on the changes in fundamental aircraft modes and flexible modes of the system. Specifically, when aircraft are connected, the fundamental modes change, can become overdamped or even unstable. In addition, connected aircraft exhibit complex flexible modes and mode shapes that change based on the parameters of the connection joint and the number of connected aircraft.