The mezzo-soprano arias in Rossini operas have captivated audiences for the last two centuries with their impressive and extensive vocal gymnastics, or coloratura. A strong coloratura technique is necessary for the successful performance of Rossini arias by mezzo-sopranos. This dissertation seeks to establish a systematic method of developing coloratura technique and implementing it in seven Rossini arias. An original correlation is made between coloratura development and the Accent Method. Historical and modern pedagogical resources affirm the practical importance of a systematic technique based on abdicostal breath support for singing, upon which the Accent Method is based. Facets of the Accent Method as previously applied to the singing voice will be applied specifically to the development of coloratura. This method has proven effective in building vocal stamina, pitch accuracy, and speed, among other qualities necessary in coloratura development. Various means of applying this method to the melismatic choices of the mezzo-soprano are then explored, along with multiple interpretations of Rossini arias by current and past performing artists. Examples of appropriate melismas are given, along with a series of technical vocal factors for each mezzo-soprano to consider.