**Abstract:** This paper will discuss voicing characteristics of Czech plosives. In the theoretical part of the paper, vocal cords are described as well as their participation on voicing. Next, a brief history, division, and application of voice synthesisers is discussed. Synthesizers allow the user to manipulate individual characteristics of any speech signal. In the practical part of the paper, HLsyn is used to synthesize individual Czech plosives with various voicing characteristics. Perceived voicing is then evaluated based on preliminary perceptual verification.

Keywords: voicing, plosives, synthesis, HLsyn, perception test