In this study, the usefulness of secondary air jets (located in front of the ejection seat) in reducing the dynamic pressure at high speeds is investigated. Wind tunnel tests were carried out on a 1/20th scale ejection seat model at transonic and supersonic Mach numbers in the 0.3m Trisonic Wind Tunnel. Two secondary air jet configurations corresponding to 2-D and axisymmetric multiple jets were used. The surface pressures on the ejection seat were measured for different jet pressure ratios. Results of surface pressure on the ejection seat are presented in tabulated form without any analysis.