[mex217] Skate mail fallacy

A skater with blades of proper length $\ell_0 = 15\text{in}$ on his skates moves with velocity $v = 0.8c$ relative to a flat ice surface, approaching a gap of (Lorentz contracted) width $d = 6\text{in}$. He argues that the front end of the blade (point A') will gain support on the far side of the gap (point C) before the back end of the blade (point B') loses support on the near side of the gap (point D). Therefore, he concludes, he will make it across the gap without accident.
This conclusion is based on the assumption that the blade can be regarded as a rigid body. Demonstrate the fallacy of this assumption as follows: If that assumption were true, point B' would know that point A' has reached safety at point C before a light signal from A' to B' could confirm that message, which is impossible.

Solution: