Let $KH[0,1] = \{ f : [0,1] \to \mathbb{R} \mid f \text{ is } KH \text{ integrable} \}$. The most widely investigated topology on $KH[0,1]$ is that given by the Alexiewicz norm $\|f\|_A = \sup_{x \in [0,1]} \left| \int_0^x f \right|$. We have investigated an inductive limit topology on $KH[0,1]$ determined by certain complete seminormed subspaces of $KH[0,1]$. The seminorms measure the rate at which Riemann sums converge to the integral. The resulting topology on $KH[0,1]$ is barreled, bornological, stronger than pointwise convergence on $[0,1]$, and stronger than the topology given by the Alexiewicz norm. (Received September 12, 2005)