Evolution of Superconducting $H_{c2}$ Transition with La-Doping in Ce$_{1-x}$La$_x$CoIn$_5$ JOHNPIERRE PAGLIONE, M.A. TANATAR, E. BOAKNIN, D.G. HAWTHORN, R.W. HILL, M. SUTHERLAND, Dept. Physics, University of Toronto, LOUIS TAILLEFER, Dépt. Physique, Université de Sherbrooke, C. PETROVIC, Dept. Physics, Brookhaven National Laboratory — Recent measurements of the heavy-fermion superconductor CeCoIn$_5$ have revealed a field-tuned quantum critical point which coincides with a first-order superconducting transition $H_{c2}$ as $T \to 0$ [1], resulting in a completely unique and intriguing $H$-$T$ phase diagram with no known magnetic phase. By substituting La for Ce, a gradual destruction of the superconducting phase allows an investigation of the correlation between the order of $H_{c2}$ and the field-tuned quantum critical behaviour. Here we report low temperature heat and charge transport measurements of Ce$_{1-x}$La$_x$CoIn$_5$ as a function of field and doping, revealing an intriguing evolution of the quantum critical behaviour in this system.