An excited metastable nuclear state of $^{192}$Os in a hydrogen-like charge state has been studied for the first time [1]. It was populated in projectile fragmentation of a $^{197}$Au beam on a $^9$Be target with the UNILAC-SIS accelerators at GSI. Fragmentation products in the region of interest were passed through the Fragment Separator (FRS) and injected into the Experimental Storage Ring (ESR). Cooling of the injected beam particles enabled Schottky Mass Spectrometry (SMS) to be performed. Analysis shows the lifetime of the state to be considerably longer than that of the neutral ion; this change is explored in the frame work of hindrance to the internal conversion decay process. Calculations have been performed to estimate the conversion coefficients for both neutral and hydrogen-like atoms/ions. These conversion coefficient calculations enabled an extrapolation of the expected lifetime that has been compared with that measured experimentally.