Let J = rad(R), J' = rad(S), and $I = \begin{pmatrix} J & M \\ 0 & J' \end{pmatrix}$. It is routine to check that I is an ideal of T, with $T/I \sim R/J \times S/J'$. The latter ring is J-semisimple, so we have rad(T) $\subseteq I$. This will be an equality, as asserted, if we can show that $1 + I \subseteq$ U(T). Now any element of $1 + I$ has the form $\begin{pmatrix} u & m \\ 0 & v \end{pmatrix}$, where $m \in M$, $u \in$ U(R), and $v \in$ U(S). This is indeed in U(T), since it has inverse $\begin{pmatrix} u^{-1} & -u^{-1}mv^{-1} \\ 0 & v^{-1} \end{pmatrix}$.