962-39-150   **Jonathan D Bihari*** (`bihari@math.duke.edu`), Department of Mathematics, Duke University, Box 90320, Durham, NC 27713-0320. *Compact Operators and Delay Differential Equations.* Preliminary report.

The classical method for studying the long-term behavior of a solution to $x'(t) = -ax(t-\tau)$ depends upon the distribution of the roots of its associated characteristic equation. If $a\tau < \frac{\pi}{2}$, these roots have negative real parts, and thus any solution approaches zero as $t \to \infty$. We provide an alternate proof of the latter statement using compact operators. (Received August 28, 2000)