Meeting: 1003, Atlanta, Georgia, SS 26A, AMS-SIAM Special Session on Dynamic Equations on Time Scales; Integer Sequences and Rational Maps, I

1003-39-1176 **Ed Janowski**, Department of Mathematics, University of Rhode Island, Kingston, RI 02881, **M. R. S. Kulenovic*** (kulenm@math.uri.edu), Department of Mathematics, University of Rhode Island, Kingston, RI 02881, and **Z. Nurkanovic** (nurkanm@yahoo.com), Department of Mathematics, University of Tuzla, 75000 Tuzla, Bosnia-Herzegovina. *Stability of the k-th order Lyness' Equation with a Period-k Coefficient.*

We first investigate the stability of the period-three solution of Todd's equation with a period-three coefficient:

$$x_{n+1} = \frac{1 + x_n + x_{n-1}}{p_n x_{n-2}}, \quad n = 0, 1, \ldots$$

where

$$p_n = \begin{cases} \alpha, \text{for } n = 3l \\ \beta, \text{for } n = 3l+1 \\ \gamma, \text{for } n = 3l+2, \quad l = 0, 1, \ldots \end{cases}. \tag{1}$$

Then for $k = 2, 3, \ldots$ we extend our stability result to the k-order equation,

$$x_{n+1} = \frac{1 + x_n + \ldots + x_{n-k+2}}{p_n x_{n-k+1}}, \quad n = 0, 1, \ldots$$

where p_n is a periodic coefficient of period k with positive real values and $x_{-k+1}, \ldots, x_{-1}, x_0 \in (0, \infty)$. We will prove the stability of the period k solution of the above equation. (Received October 04, 2004)