962-35-99 **Herbert C Kranzer*** (kranzer@panther.adelphi.edu), Prof. Herbert C. Kranzer, Dept. of Mathematics and Computer Science, Adelphi University, Garden City, NY 11530. *A Strictly Hyperbolic, Genuinely Nonlinear 2x2 System of Conservation Laws which is L^1-unstable.*

The system

$$\begin{aligned} u_t + (u^2 - v)_x &= 0, \\ v_t + (\tfrac{1}{3}u^3 - u)_x &= 0, \end{aligned} \tag{1}$$

with characteristic velocities $\lambda_\pm(u) = u \pm 1$, is strictly hyperbolic and genuinely nonlinear, but there is no single global separating velocity Λ such that $\lambda_-(u_1) < \Lambda < \lambda_+(u_2)$ for all u_1, u_2. The general solution of the Riemann problem for (**??**) incorporates a singular shock S_δ with an unbounded profile [Keyfitz-Kranzer, J. Diff. Eq. **118** (1995), 420-451]. We investigate the L^1 stability of the Cauchy problem for this system. For two solutions $U_1 = (u_1, v_1)$ and $U_2 = (u_2, v_2)$ whose Cauchy data are close to the Riemann data for S_δ, we find that $||U_1 - U_2||_{L_1}$ can grow without bound as $t \to +\infty$. (Received August 01, 2000)