

April 1st

$$dz \frac{M_A}{M_T dz}$$

$$DV = V_e \ln \left(\frac{M_0}{M_f} \right)$$

$$DV = \int_{M_f}^{M_0} \frac{V_e}{M} dM$$

$$M_0 = M_{prop} + M_{pay} + M_{Tost}$$

$$dz \frac{M_0}{M_{prop} M_{pay} M_{Tost}}$$

$$dz \ln \left(\frac{M_0}{M_f} \right)$$

$$\int \frac{dz}{dz} \ln \left(\frac{M_0}{M_f} \right) = \ln \left(\frac{M_0}{M_f} \right)$$

$$d = Ce^{-\frac{Dv}{I_{sp} g_0}}$$

On ~~decrease~~ I_{sp} I_{sp} more increases

$$Dv = I_{sp} g_0 h \left(\frac{m_0}{m_f} \right)$$

$$= v_e h \left(\frac{m_0}{m_f} \right)$$

$$\frac{Dv}{I_{sp} g_0} = h \left(\frac{m_0}{m_f} \right)$$

$$= 1 -$$

$$\Rightarrow e^{-\frac{Dv}{I_{sp} g_0}} = 1 - \frac{m_0 - m_f}{m_0}$$

$$\Rightarrow \frac{m_0}{m_f} = 1 - e^{-\frac{Dv}{I_{sp} g_0}}$$

$$M = 1 - e^{-\frac{Dv}{I_{sp} g_0}}$$

$$= 0.857$$