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↪ = positive moment: sum moments about A

$$\underbrace{\left(\frac{V}{2}\right)\left(\frac{h}{2}\right)}_1 + \underbrace{\left(\frac{V}{2}\right)\left(\frac{h}{2}\right)}_2 + \underbrace{\left(\frac{V}{2}\right)\left(\frac{h}{2}\right)}_3 + \underbrace{\left(\frac{V}{2}\right)\left(\frac{h}{2}\right)}_4 - \underbrace{D\left(\frac{l}{4}\right)}_5 - \underbrace{\left(\frac{Vh}{l} + \frac{D}{2}\right)\left(\frac{l}{4}\right)}_6$$

$$- \underbrace{\left(\frac{Vh}{l} - \frac{D}{2}\right)\left(\frac{l}{4}\right)}_7 - \underbrace{\frac{Vh}{2} - \frac{Dl}{4}}_8$$

$$= \underbrace{Vh}_{1-4} - \underbrace{\frac{Dl}{4}}_5 - \underbrace{\frac{Vh}{4} - \frac{Dl}{8}}_6 - \underbrace{\frac{Vh}{4} + \frac{Dl}{8}}_7 - \underbrace{\frac{Vh}{2} - \frac{Dl}{4}}_8$$

$$= Vh - \frac{Vh}{4} - \frac{Vh}{4} - \frac{Vh}{2} - \frac{Dl}{4} - \frac{Dl}{8} + \frac{Dl}{8} - \frac{Dl}{4}$$

$$= -\frac{Dl}{2} \neq 0 \text{ Not in equilibrium.}$$



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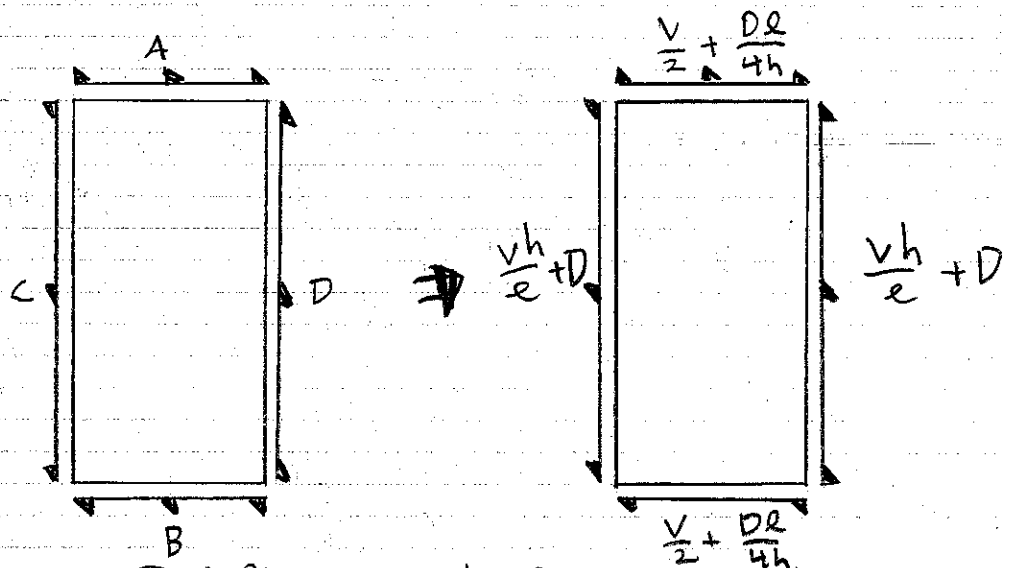
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Or viewed differently, uncouple the moment & sum forces

$$\text{Moment} = \frac{vh}{2} - \frac{Dl}{4} \quad \text{arm} = h$$

$$\text{forces in couple} = \frac{v}{2} - \frac{Dl}{4h}$$



$$\text{Line A: } \frac{v}{2} + \frac{v}{2} - \left(\frac{v}{2} - \frac{Dl}{4h} \right) = \frac{v}{2} + \frac{Dl}{4h}$$

Line B: same as line A

$$\text{Line C: } \frac{vh}{e} - \frac{D}{2} + D = \frac{vh}{e} + D$$

$$\text{Line D: } \frac{vh}{e} + D$$

Not in equilibrium because not all lines are =



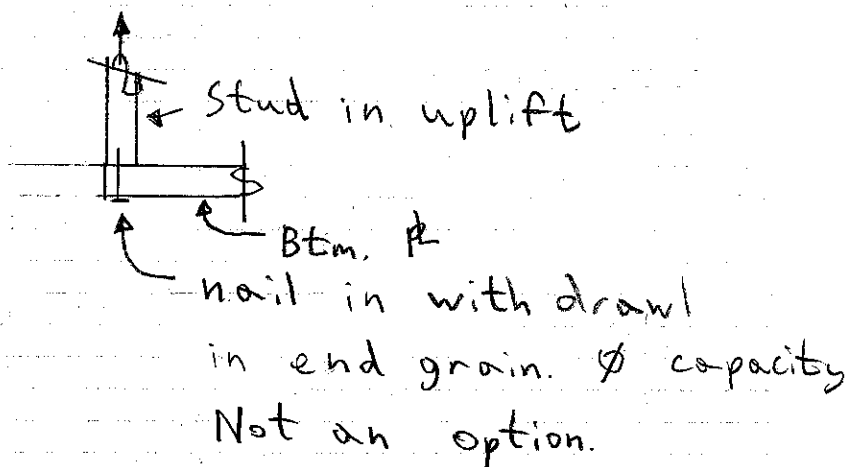
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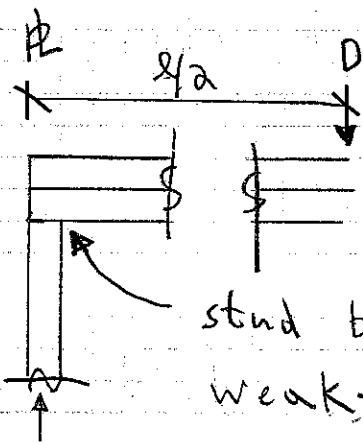
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1) Bottom PL

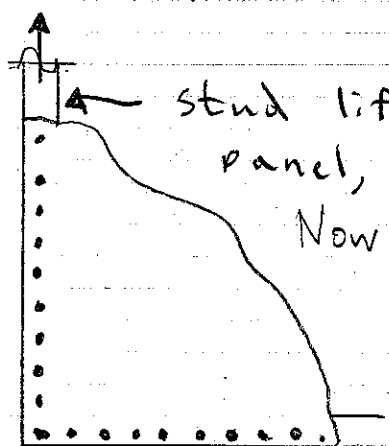
Typical conn.



2) Top PL



3) Panel



Now Btm. PL has to resist??