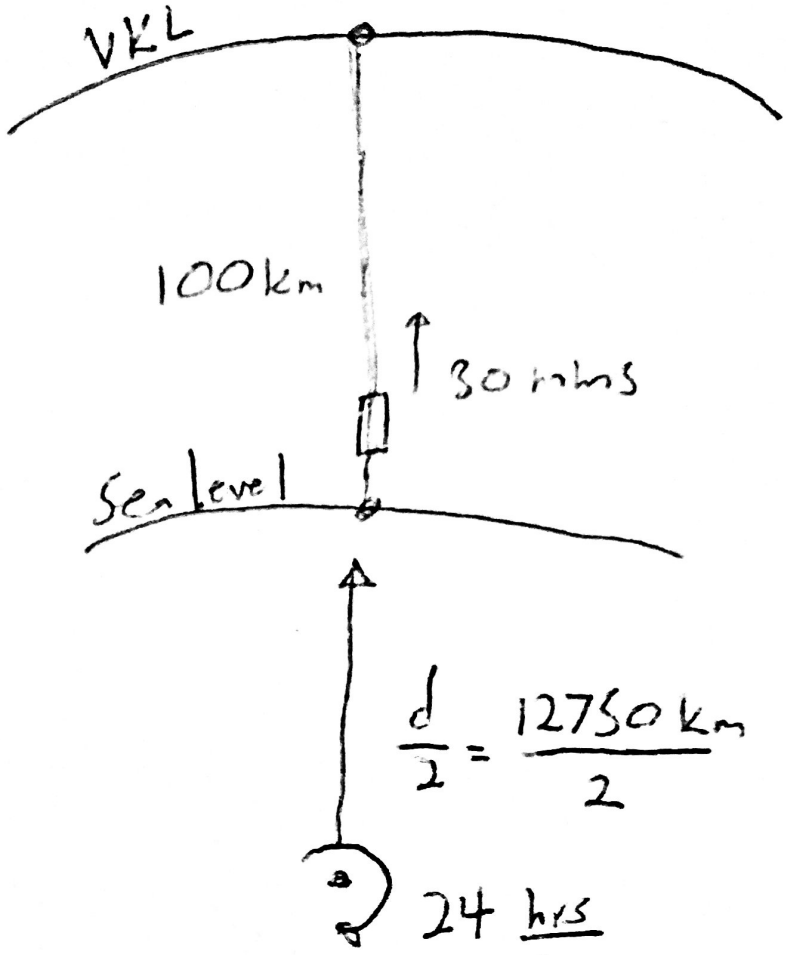

$$V_r = \dot{r}$$

$$= \frac{100\,km}{30\,mhs} \times \frac{60\,mh}{hr} = 200\,\frac{km}{hr}$$

$$V_\theta = \left(\frac{12750}{2} + 50\right) km \times \frac{2\pi\,rad}{24\,hrs}$$

$$r_{avg} \qquad \dot{\theta}$$

$$= \frac{6475}{12}\pi \quad \frac{km}{hr}$$

$$V = \sqrt{V_r^2 + V_\theta^2}$$