

2) An openplane makes a complete quarter flyby at 40m radius towards left when flying at 175 km/hr. The mass of rotary engine and propeller is 900kg with $k = 0.3 \text{ m}$, no speed lagging - 2500 rpm clockwise when viewed from the rear.

Find the gyroscopic couple on the aircraft which will be the effect by the openplane turn towards right instead of at left.

$$\Rightarrow \text{Soln} \quad r = 40 \text{ m}$$
$$V = 175 \text{ km/hr}$$
$$= 175 \times \frac{5}{18} = 48.67 \text{ m/s}$$

$$m = 900 \text{ kg}$$

$$k = 0.3 \text{ m}$$

$$N = 2500 \text{ rpm}$$

$$W = \frac{2\pi N}{60} = 2617.9 \text{ rad/s}$$