2) $C_L = 0.341 + 6.22 \cdot \alpha$

$C_D = (0.341 + 6.22 \cdot \alpha)^2 \cdot 0.0516 + 0.023$

$L = (0.341 + 6.22 \cdot \alpha) \cdot V^2 \cdot \rho \div 2$

$P = \frac{\rho}{2} \cdot V^2 \cdot \left[(0.341 + 6.22 \cdot \alpha)^2 \cdot 0.0516 + 0.023 \right]$

3) $T = 20000 + 432000 \cdot \delta T$

$x_p = \cos(0.0378) \cdot (20000 + 432000 \cdot \delta T)$

$z_p = \sin(0.0378 - (20000 + 432000 \cdot \delta T)$

4) $\dot{V} = \frac{x_p - D}{130000} - 9.81 \cdot \sin(\gamma)$

5) $\dot{x} = \frac{(L - z_p) \cdot \sin(\mu)}{130000 \cdot V \cdot \cos\gamma}$

6) $\dot{\gamma} = \frac{(L - z_p) \cdot \cos\mu}{130000 \cdot V} - \frac{\cos\gamma \cdot 9.81}{V}$

7) $\dot{h} = V \cdot \sin\gamma$

8). According to the inputs and signals, the current state and state derivatives are worked out.

10) Yes. it is good. Because the curves of ϕ and $\dot{\phi}$ respectively are almost overlaid..

12) The linear approximation is very bad.
Because the initial angle is too large and the linearized equation are simplified around $\phi = 0$.