

flight phase C	Design	Modes	ζ	$\omega_d(F1)$	T2	τ	Design	Modes	ζ	$\omega_d(F1)$	T2	τ
Iter 1	With Weight	long. phugoid (3)	0.00974154				Without Weight	long. phugoid (3)	0.00949056			
		sp (1)	0.617551					sp (1)	0.674			
		spiral (4)			7.22664			spiral (4)			6.47386	
		lateral roll (1)				0.0360394		lateral roll (1)				0.032238
		dutch (2)	0.121115	0.728307				dutch (2)	0.135635	0.727863		
Iter 2	With Weight	long. phugoid (3)	0.0188645				Without Weight	long. phugoid (3)	0.0179791			
		sp (1)	0.378027					sp (1)	0.430617			
		spiral (4)			6.14956			spiral (4)			5.36392	
		lateral roll (1)				0.0669459		lateral roll (1)				0.0575566
		dutch (2)	0.0779981	0.650641				dutch (2)	0.0919635	0.655326		
Iter 3	With Weight	long. phugoid (3)	0.0213318				Without Weight	long. phugoid (3)	0.0195438			
		sp (1)	0.9803062					sp (1)	0.960312			
		spiral (4)			4.28352			spiral (4)			5.27639	
		lateral roll (1)				0.0272726		lateral roll (1)				0.027439
		dutch (2)	0.214735	0.678907				dutch (2)	0.214003	0.675472		
Iter 4	With Weight	long. phugoid (3)	0.0175856				Without Weight	long. phugoid (3)	0.020516			
		sp (1)	0.874658					sp (1)	0.962489			
		spiral (4)			7.49597			spiral (4)			6.54546	
		lateral roll (1)				0.0294037		lateral roll (1)				0.0243062
		dutch (2)	0.177805	0.701887				dutch (2)	0.209181	0.717494		

NOTES

Make sure inertia extracted from solidworks/fusion is wrt the same axes corresponding to those in xflr5
assumed dutch maximum wd=.6

- LVL 1
(Best)
- LVL 2
- LVL 3
(Least)
- Dangerous
- Too much stability

Damping ratio

Damped natural frequency (ζ) or F1

Time to double (T2) or (t2)
(for unstable system)

Time constant (τ)