



Helicopter Flight Dynamics: The Theory and Application of Flying Qualities and Simulation Modelling (Hardback)

By Gareth D. Padfield

John Wiley and Sons Ltd, United Kingdom, 2008. Hardback. Condition: New. 2nd Revised edition. Language: English . Brand New Book. The behaviour of helicopters is so complex that understanding the physical mechanisms at work in trim, stability and response, and thus the prediction of Flying Qualities, requires a framework of analytical and numerical modelling and simulation. Good Flying Qualities are vital for ensuring that mission performance is achievable with safety and, in the first edition of Helicopter Flight Dynamics, a comprehensive treatment of design criteria was presented. In this second edition, the author complements this with a new Chapter on Degraded Flying Qualities, drawing examples from flight in poor visibility, failure of control functions and encounters with severe atmospheric disturbances. Fully embracing the consequences of Degraded Flying Qualities during the design phase will contribute positively to safety. The accurate prediction and assessment of Flying Qualities draws on the modelling and simulation discipline on the one hand and testing methodologies on the other. Checking predictions in flight requires clearly defined mission-task-elements , derived from missions with realistic performance requirements. High fidelity simulations also form the basis for the design of stability and control augmentation systems, essential for conferring Level 1 Flying...



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