

1. Record Nr.	UNINA9910781412103321
Titolo	Flight control systems [[electronic resource] /] / edited by Roger W. Pratt
Pubbl/distr/stampa	Herts, U.K., : Institution of Electrical Engineers Reston, Va., : American Institute of Aeronautics and Astronautics, c2000
ISBN	1-60086-655-7 1-60086-436-8
Descrizione fisica	1 online resource (412 p.)
Collana	Progress in astronautics and aeronautics ; ; v. 184
Altri autori (Persone)	PrattRoger <1943->
Disciplina	629.135
Soggetti	Airplanes - Control systems - Design and construction Flight control
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	<p> ""Cover""; ""Title""; ""Copyright""; ""Table of Contents""; ""Contributors""; ""Preface""; ""Glossary of terms""; ""Nomenclature""; ""Chapter 1 Industrial considerations for flight control""; ""1.1 Introduction ""; ""1.2 The general objectives of flight control ""; ""1.3 The role of the flight control system ""; ""1.4 Aircraft in-service requirements ""; ""1.5 The benefits of fly-by-wire ""; ""1.6 Flight control systems implementation ""; ""1.7 Military aircrafta€?state-of-the-art and future challenges ""; ""1.8 Civil aircrafta€?state-of-the-art and future challenges "" ""1.9 The flight control system development process "" ""1.10 Closing discussion ""; ""1.11 Acknowledgements ""; ""1.12 References ""; ""Chapter 2 Aircraft modelling""; ""2.1 Introduction ""; ""2.2 A mathematical framework ""; ""2.3 Axes systems and notation ""; ""2.4 Euler angles and aeroplane attitude ""; ""2.5 Controls notation ""; ""2.6 The decoupled small-perturbation equations of motion ""; ""2.7 The equations of motion in state-space form ""; ""2.8 Aircraft-response transfer functions ""; ""2.9 The transfer function matrix ""; ""2.10 Longitudinal response to controls "" ""2.11 Lateral-directional response to controls "" ""2.12 Conclusions ""; ""2.13 Reference ""; ""Chapter 3 Actuation systems""; ""3.1 Introduction ""; ""3.2 Actuation system technologia€?an overview ""; ""3.3 Actuation </p>

system-performance criteria"; "3.4 Actuation system modelling";
"3.5 Nonlinear frequency response"; "3.6 Saturation analysis"; "3.7
Jump resonance"; "3.8 Failure transients"; "3.9 Conclusions";
"3.10 Acknowledgements"; "Chapter 4 Handling qualities"; "4.1
Introduction"; "4.2 Longitudinal flying qualities"
"4.3 Lateral-directional flying qualities" "4.4 Stability and control-
augmentation systems"; "4.5 Notes on some control design concepts
"; "4.6 Pilot-induced oscillations (PIOs)"; "4.7 Modal PIO criteria";
"4.8 Non-modal PIO criteria"; "4.9 Effects of rate limiting on PIO";
"4.10 Concluding remarks"; "4.11 References"; "Chapter 5
Automatic flight control system design considerations"; "5.1 AFCS
development programme"; "5.2 Requirements definition and
verification"; "5.3 System design considerations"; "5.4 AFCS
architecture"
"Chapter 6 Ground and flight testing of digital flight control
systems" "6.1 Introduction"; "6.2 Philosophy of flight testing"; "6.3
Aircraft ground testing"; "6.4 Flight test tools and techniques"; "6.5
Flight testing"; "6.6 Conclusion"; "6.7 Acknowledgements"; "6.8
References"; "Chapter 7 Aeroservoelasticity"; "7.1 Introduction";
"7.2 Elements of structural coupling"; "7.3 FCS-SC structural
coupling: design examples"; "7.4 Future developments"; "7.5
Conclusions"; "7.6 References"
"Chapter 8 Eigenstructure assignment applied to the design of an
autopilot function for a civil aircraft"
