1. Record Nr. UNINA9910811288803321 Autore Watkinson John <1950-> Titolo Art of the helicopter / / John Watkinson Pubbl/distr/stampa Oxford;; Burlington, MA,: Elsevier Butterworth-Heinemann, 2004 **ISBN** 1-280-96648-3 9786610966486 0-08-047203-6 Edizione [1st ed.] Descrizione fisica 1 online resource (405 p.) Disciplina 629.133352 Soggetti Helicopters Helicopters - Aerodynamics Helicopters - Control systems Helicopters - Electric equipment Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Note generali Includes index. Nota di contenuto front cover; copyright; table of contents; front matter; Preface; Acknowledgements; body; 1 Introduction to rotorcraft; 1.1 Applications of the helicopter; 1.2 A short technical helicopter history; 1.3 Types of rotorcraft; 1.4 Rotor configurations; 1.5 The essential elements; 1.6 The airframe; 1.7 Engine and transmission; 1.8 The fuel system; 1.9 The landing gear: 1.10 Oleos and ground resonance: 1.11 The rotors: 1.12 The control system; 1.13 Electrical and hydraulic system; 1.14 Instruments and avionics; 2 Technical background; 2.1 Introduction to mechanics; 2.2 Mass and density 2.3 Force and acceleration 2.4 Strength and rigidity; 2.5 Resultants and components offorces: 2.6 Moments and couples; 2.7 Work, energy, power and momentum; 2.8 Efficiency; 2.9 Gases and the atmosphere; 2.10 Sound; 2.11 The mechanics ofoscillation; 2.12 The mechanics ofrotation; 2.13 Sidebands; 2.14 Fourier analysis; 2.15 Centrifugal and Coriolis forces; 2.16 Rotating masses and precession; 2.17 The gyroscope; 2.18 Piezo-electric and laser gyroscopes; 2.19 Feedback; 3

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## Sommario/riassunto

The modern helicopter is a sophisticated device which merges a surprising number of technologies together. This wide range of disciplines is one of the fascinations of the helicopter, but it is also makes a complete understanding difficult. Those searching for an understanding of the helicopter will find The Art of the Helicopter invaluable. John Watkinson approaches every subject associated with the helicopter from first principles and builds up in a clearly explained logical sequence using plain English and clear diagrams, avoiding unnecessary mathematics. Technical terms and