

WHY DON'T JUMBO JETS
FLAP THEIR WINGS?

CONTENTS

Illustrations ix

Preface xi

Acknowledgments xiii

- 1 Flying Animals and Flying Machines:
Birds of a Feather? 1
 - 2 Hey, Buddy, Need a Lift? 15
 - 3 Power: The Primary Push 42
 - 4 To Turn or Not to Turn 63
 - 5 A Tale of Two Tails 82
 - 6 Flight Instruments 100
 - 7 Dispensing with Power: Soaring 124
 - 8 Straight Up: Vertical Take-Offs and Hovering 142
 - 9 Stoop of the Falcon: Predation and Aerial Combat 169
 - 10 Biology Meets Technology Head On:
Ornithopters and Human-Powered Flight 194
- Epilogue: So Why *Don't* Jumbo Jets Flap Their Wings? 228
- Notes* 235
Glossary 253
Bibliography 259
Index 269