This book aims at presenting the topics of Airport Engineering written in a simple manner. The subject-matter is characterized by comprehensive as well as methodical and easy-to-follow style, reflecting the latest FAA, ICAO, IATA and AAI recommendations and guidelines. Latest technique of GPS air traffic control has been highlighted in detail. Modern concept of Free Flight is also added.

The outline of the book is:

Chapter 1: Introduction to the subject of Airport Engineering, Airport terminology, Open skies policy and more.
Chapter 2: Explains Airport Survey
Chapter 3: Discuss Airport Planning
Chapter 4: Elucidates Planning and Design of Terminal Area
Chapter 5: Gives main aspects connected with the Runway Design.
Chapter 6: Gives features associated with Taxiway Design
Chapter 7: Newly added chapter on Aviation Fuel
Chapter 8: Gives aspects and various methods of the Airport Pavement Design
Chapter 9: Gives topics on Airport Grading and Drainage
Chapter 10: Explains Visual Aids required for aircraft
Chapter 11: Describes Air Traffic Control (ATC) systems
Chapter 12: Discuss topics on Heliports and Stolports

The text-matter has been arranged systematically into Twelve Chapters and various complicated topics are explained in lucid language assisted by:

- 114 Self-explanatory and neatly drawn sketches;
- 21 Illustrative problems;
- 35 Important useful tables;
- 254 Typical questions at the end of the chapters.

The book should prove to be extremely useful to the Civil Engineering students preparing for the Degree Examinations of all the Indian Universities, Diploma Examinations conducted by various Boards of Technical Education, Certificate Courses as well as for the A.M.I.E., U.P.S.C., G.A.T.E., I.E.S. and other similar competitive and professional examinations. It should also prove of interest to the practising professionals.
## CHAPTER 1 INTRODUCTION

### 1-1. General
- (1) Collective demand
- (2) Efficient and adequate supply
- (3) Power of discrimination

### 1-2. Significance of transport

#### 1-2-1. Economic significance of transport
- (1) Agriculture
- (2) Competition
- (3) Consumption
- (4) Distribution
- (5) Exchange
- (6) Industrial development
- (7) Land utilization

#### 1-2-2. Political significance of transport
- (1) National defence
- (2) National unity

#### 1-2-3. Social significance of transport
- (1) Concentration of population
- (2) Elimination of cottage scale production
- (3) Loss of distinguishing characteristics
- (4) Mass destruction
- (5) Restrictions on international transport

### 1-3. Modes of transport
- (1) Land transport
- (2) Water transport

### 1-4. History of aviation

### 1-5. Air transportation in India
- (1) Indian Airlines Corporation
- (2) Air India International Corporation

### 1-6. International airport authority of India (IAAI)

### 1-7. Civil aviation department

### 1-8. Airport authority of India (AAI)

### 1-9. Open sky policy

### 1-10. Airport terminology
- (1) Aerodrome
- (2) Airplane
- (3) Aircraft
- (4) Airfield
- (5) Airport
- (6) Airport capacity
- (7) Air traffic
- (8) Approach area
- (9) Apron
- (10) Approach area or approach zone
- (11) Approach surface
- (12) Apron
- (13) Balloon
- (14) Beaufort scale
- (15) Blast pads
- (16) Boundary lights
- (17) Boundary markers
- (18) Calm period
- (19) Cargo
- (20) Clearway
- (21) Conical surface
- (22) Control area
- (23) Control tower
- (24) Control zone
- (25) Cto
- (26) Design landing weight
- (27) Drainage plan
- (28) Elevator
- (29) Flight time
- (30) Flight visibility
- (31) Fuselage
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- (1) Engine
- (2) Flaps
- (3) Fuselage
- (4) Propeller

### 1-12. Aircraft characteristics
- (1) Aircraft capacity
- (2) Aircraft speed
- (3) Aircraft weight and wheel arrangement
- (4) Fuel spilling
- (5) Jet blast
- (6) Minimum circling radius
- (7) Minimum turning radius
- (8) Noise
- (9) Range

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### 2-2. Objects of surveys

#### 2-3. Types of surveys
- (1) Approach zone survey
- (2) Drainage survey
- (3) Meteorological survey
- (4) Natural resources survey

### 2-4. Drawings to be prepared
- (1) Drainage plan
- (2) Grading plan
- (3) Lighting plan
- (4) Master plan

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- (1) Capacity of existing airport
- (2) Improving the existing capacity
- (3) Traffic forecast
- (4) Planning a new airport

### 3-3. Airport site selection
- (1) Atmospheric and meteorological conditions
- (2) Availability of land for expansion
- (3) Availability of utilities
- (4) Development of the surrounding area
- (5) Economy of construction
- (6) Ground accessibility
- (7) Presence of other airports
- (8) Regional plan
- (9) Soil characteristics
- (10) Surrounding obstructions
- (11) Topography
- (12) Use of airport

### 3-4. Airport capacity

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- (3) Performance characteristics of aircrafts
- (4) Volume of traffic

### 3-6. Forecasting in aviation

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- (2) Objects with actual heights

### 3-8. Clear zone

### 3-9. Turning zone

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- (2) Land-use zoning

### 3-11. Regional planning
- (1) Air traffic
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