

Table of Contents

PREFACE	v
INTRODUCTION	vii
Reference Marks.....	vii
GLOSSARY	ix
Chapter 1—Application of these Regulations	1
1.1 Contractual Considerations.....	1
1.2 Shipper Responsibilities.....	2
1.3 Carrier Responsibilities	3
1.4 Special Conditions	3
1.5 Cargo Services Conference Resolutions.....	3
1.6 Compliance	4
Chapter 2—Government Regulations	5
2.1 Compliance	5
2.2 Government Regulatory Agencies and Food Laws	5
Chapter 3—Carrier Regulations	7
3.1 General Airline Information	7
3.2 Specific Airline Variations	13
Chapter 4—Pharmaceutical Products Facts and Types	17
4.1 Air Transport Industry	17
4.2 Types of Pharmaceutical Products	18
4.3 Market Trends.....	24
Chapter 6—Packaging	25
6.1 General Knowledge	25
6.2 Air Shipment Requirements.....	25
6.3 Package Categories.....	29
Chapter 7—Documentation and Labelling	35
7.1 Air Waybill	35
7.2 Cargo Handling Codes	35
7.3 Aircraft Documents	35
7.4 Special Load Notification to Captain.....	36
7.5 Government Documents	41
7.6 Labelling.....	41
7.7 Marking	41
7.8 WHO Documentation and Labelling for Vaccines	43



Temperature Control Regulations

Chapter 8—Acceptance and Control	45
8.1 General Knowledge	45
8.2 Hazard Analysis Critical Control Point.....	45
8.3 Cold Chain Management.....	52
8.4 Load Acceptance	53
8.5 Signs of Abnormal Loads.....	54
8.6 Tips and Check List	54
Chapter 9—Traceability and Tracking	57
9.1 General Knowledge	57
9.2 RFID.....	58
Chapter 10—Perishable Handling Procedures	67
10.1 Effects of Handling Operations on Perishables Quality.....	67
10.2 Incompatible Loads and Segregation	69
Chapter 12—Airport Ground Operations: Terminal and Ramp Side	71
12.1 General Knowledge	71
12.2 Weather and Geographical Locations	71
Chapter 13—Perishable Handling Facilities	77
13.1 General Knowledge	77
13.2 Cold Room and Freezers.....	78
Chapter 17—Air Transport Logistics for Time and Temperature Sensitive Healthcare Products	81
17.1 Applicability	81
17.2 Purpose.....	81
17.3 Air Transport Logistics Overview	82
17.4 Service Levels.....	82
17.5 Product Temperature Ranges	84
17.6 Packaging Technology.....	85
17.7 Key Risk Factors.....	87
17.8 Critical Control Points	87
17.9 Temperature Mapping Recommendations	94
17.10 Package Labeling for Healthcare Products	94
17.11 Training Programs	97
17.12 Quality Management Systems.....	99
17.13 Additional Environmental Considerations	101
17.14 Further Reading	102
Appendix A—Ventilation, Heating and Cooling Capability of Airbus and Boeing Aircraft	103
Appendix B—General Design Requirements for Thermal, Insulated and Refrigerated Containers	107