

| CONTENTS | page |
|---|-----------|
| FOREWORD | 1 |
| INTRODUCTION | 2 |
| 1. THE POSITION OF DISTRIBUTION LOGISTICS IN THE LOGISTIC SYSTEM OF AN ENTERPRISE | 3 |
| 1.1. Logistic divisions | 4 |
| 1.2. The distribution logistics | 6 |
| 1.3. Distribution and its functions | 8 |
| 1.4. Distribution politics | 9 |
| 1.5. Distribution systems | 10 |
| 1.5.1. <i>Distribution channels</i> | 10 |
| 1.5.2. <i>Acquisition and logistic distribution subsystem</i> | 11 |
| 1.6. The physical distribution | 11 |
| 1.6.1. <i>Storage</i> | 12 |
| 1.6.2. <i>Packaging</i> | 13 |
| 1.6.3. <i>Output of goods, loading</i> | 14 |
| 1.6.4. <i>Transport</i> | 15 |
| 2. CLASSIFICATION OF ITEMS OF DISTRIBUTION SPACE | 19 |
| Due to the explicit identification of solved topic it is necessary to define the basic area of distribution and related subjects and objects of distribution. | 19 |
| 2.1. Definition of items and criteria of distribution space | 19 |
| 2.1.1. <i>Items and criteria defining the shape and size of distribution space</i> | 19 |
| 2.1.2. <i>Items and criteria influences the topology of the distribution network</i> | 21 |
| 2.1.2.1. <i>The criteria defining the basic shape of the distribution network</i> | 22 |
| 2.1.2.2. <i>Additional criteria that influence the choice of distribution stations</i> | 23 |
| 2.1.3. <i>Items and criteria defining the performance (operation) of a distribution</i> | 24 |
| 2.2. Classification of distribution networks | 24 |
| 2.2.1. <i>Linkage among the items of distribution networks</i> | 25 |
| 2.2.2. <i>The basic types of distribution networks</i> | 26 |
| 2.2.3. <i>Complex structures of distribution networks</i> | 27 |
| 2.2.4. <i>Static and dynamic distribution networks</i> | 28 |
| 3. WAREHOUSES AND POSSIBILITIES OF THEIR DESIGNING | 30 |
| 3.1. Storage as part of the logistics | 30 |
| 3.2. A warehouse design | 31 |
| 3.3. The top pretences for building of warehouses | 32 |
| 3.4. Storage systems | 33 |
| 3.5. Types of storage and their functions | 33 |
| 3.6. Logistics systems in storage | 34 |
| 3.8. The model PDS – Project of a Distribution Warehouse | 40 |
| 4. DIMENSIONING OF ITEMS OF DISTRIBUTION NETWORKS | 41 |
| 4.1. The procedure and possibility of defining capacity of distribution warehouses | 41 |
| 4.1.1. <i>Mathematical approach of defining capacity of distribution warehouses</i> | 43 |
| 4.1.2. <i>The use of simulation for the purpose of distribution logistics</i> | 46 |
| 4.1.3. <i>The heuristic approach of defining the capacity of distribution warehouses</i> | 49 |
| 4.2. Calculation of a warehouse capacity | 50 |
| 5. THE ALLOCATION AND ITS APPLICATION IN DISTRIBUTION SYSTEMS | 53 |
| 5.1. The allocation and multi-criteria decision making | 54 |

| | | |
|-----------|--|-----------|
| 5.1.1. | <i>Criteria definition</i> | 54 |
| 5.1.2. | <i>Determination of weights for defined criteria</i> | 54 |
| 5.1.3. | <i>The direct methods for determining the criteria weights</i> | 55 |
| 5.1.4. | <i>The indirect methods for determining the criteria weights</i> | 56 |
| 5.1.5. | <i>The calculation of the overall usefulness of the particular variants</i> | 60 |
| 5.1.6. | <i>Direct methods for assessing the overall usefulness of variants</i> | 61 |
| 5.1.7. | <i>Indirect methods assessing the overall usefulness of variants</i> | 64 |
| 5.2. | The allocation by using geometric methods | 68 |
| 5.2.1. | <i>The allocation using the axial distance</i> | 69 |
| 5.2.2. | <i>The allocation using the quadratic distance</i> | 71 |
| 5.2.3. | <i>The allocation using the direct distance, the Cooper iterative method</i> | 71 |
| 5.2.4. | <i>The allocation using the direct coordinated distance</i> | 74 |
| 6. | MODELLING OF TRANSPORT TASKS | 77 |
| 6.1. | The formulation of transport tasks | 77 |
| 6.2. | The methods suitable for solving of transport tasks | 80 |
| 6.2.1. | <i>The North West Corner method</i> | 80 |
| 6.2.2. | <i>The index method – Stepping stone</i> | 81 |
| 6.2.3. | <i>The Vogel's approximation method</i> | 81 |
| 6.2.4. | <i>The modified distribution – MOD1 (MODified DIstribution)</i> | 82 |
| 7. | THE PROCEDURE IN SOLVING DISTRIBUTION PROBLEMS | 84 |
| | CONCLUSION | 87 |
| | REFERENCES | 88 |
| | LIST OF FIGURES | 91 |
| | LIST OF TABLES | 92 |