

Contents

1 List of Abbreviations	3
2 Preface	4
3 Terms and Definitions	5
3.1 <i>Quality</i>	5
3.2 <i>Quality of Weapon System</i>	5
3.3 <i>Weapon System</i>	5
4 Weapon System Life Cycle	6
5 Quality Management Systems of Armed Forces and Weapon System Suppliers	7
6 Main Processes of Quality Management System of Armed Forces	10
6.1 <i>Process of Setting Needs and Requirements for a New Weapon System</i>	10
6.2 <i>Process of Purchasing a New Weapon System</i>	18
6.2.1 <i>Defining Requirements for the Quality of Weapon System Supplies</i>	18
6.2.2 <i>Selecting Weapon System Supplier</i>	18
6.3 <i>Process of Weapon System Utilisation</i>	24
6.4 <i>Process of Weapon System Retirement</i>	26
7 Main Processes of Quality Management System of Weapon System Supplier	27
7.1 <i>Weapon System Design and Development Process</i>	27
7.2 <i>Production Process of a New Weapon System</i>	29
7.3 <i>Service Process</i>	30
8 Government Quality Assurance of Weapon System	31
8.1 <i>Supervision over Weapon System Quality</i>	32
8.2 <i>Final Inspection of Weapon System</i>	33
8.3 <i>Quality Audits</i>	34
9 Process Management	36
9.1 <i>Process Monitoring and Measurement</i>	37
9.2 <i>Process Management Procedure</i>	38
10 Process Variability	40
10.1 <i>Causes of Process Variability</i>	40
10.2 <i>Processing of Process Variability Statistical Data</i>	42
10.3 <i>Process Mean</i>	44
10.4 <i>Measures of Process Variability</i>	45

10.4.1 Process Variation Range	45
10.4.2 Variance and Standard Deviation of the Process	45
10.4.3 Sample Data Analysis	47
10.4.4 Normal Distribution	50
10.4.5 Utilisation of Variability in Production Process Management	53
11 Statistical Process Control	55
11.1 Principle of Control Charts	55
11.2 Control Charts for Variable	57
11.2.1 Control Charts for \bar{x}, R	58
11.2.2 Control Charts for Individual Measurements x_i, R_k	63
11.3 Shooting Control Chart	65
11.3.1 Shooting Control Chart for Snipers	66
12 Process Capability	69
12.1 Indexes of Process Capability	69
12.2 Capable and Incapable Processes	71
12.3 Sniper's Shooting Capability	74
12.3.1 Sniper's Shooting Capability Index	75
References	79
Appendix No.1 Factors for Calculation Variables Control Charts	80
Appendix No.2 Cumulative Standard Normal Distribution Values	81
Appendix No.3 Values of Function $\Phi(z)$ at the Interval $\langle -z; z \rangle$	82