

CONTENTS

- 1. Function of Value Analysis** **1**
- What Does Value Analysis Do— How Does it Work— What Are the Goals? The Race between Productivity and Rising Costs. Value Analysis and Value Engineering. Historical Sketch. Abstracting General Principles.
- 2. The Nature of Value** **13**
- One Definition of the Concept of Value. Value of a Free Society. The Principle of Consumer Sovereignty. The Rise of Discretionary Income. Working on the Side of the Angels. Is Low Cost THE Major Factor in Sales? BOTH Cost Reduction AND Product Improvement. Working Definitions Leading to a Definition of Value. Beyond Simple Definitions. Conditions Leading to Economic Value. Components of Product Value. What is Product Value? Aspects of Economic Value. Objective and Subjective Value. Value and the Customer. Who determines Exchange Value?
- 3. Who Does Value Analysis** **35**
- Eve Started It. The Little Woman. Everybody When They Buy Something Important. Professional Buyers on Their

Way Up. The Design Engineer. Value Analysis in the Factory. Any Department Manager. The General Manager.

4. How It is Done 52

Requirements. The Value Task Group and Other Approaches. Workshops and Seminars. The Value Analysis Job Plan. The Most Dynamic of Group Dynamics.

5. Information Phase 80

To Be Information, It Must be New. Is it TRUE? Some Definitions Pertaining to Information. From Search to Innovation. Collecting Information. The Principle of Adequate Information. Steps in the Search Pattern. The Principle of Selectivity.

6. Analytic Phase 98

The Principle of Direction. The Principle of Responsibility. Analyzing the Function. Principle of Usefulness. Define the Function. The Principle of Limited Resources. The Principle of Economy. What Does It Cost? What Should It Cost? Functions in the Transportation and Process Industries. Defining the Functions of State Documents.

7. Creative Phase 118

How to Welcome New Ideas. Freeing Your Inventive Personality. Environment for Invention and Discovery. Fostering Inventive Traits. The Process of Invention and Discovery. The Task of Innovation. The Principle of Balance and Proportion. The Task of Simplification.

8. Evaluation 132

Option, Choice, Selection, and Decision. Numbering Measuring, Weighing, The COMBINEX Aid to Decision. The Additivity Assumption. Weighting Factors. Effectiveness of the Various Choices. Use of Submatrices. Rack-

ing Up the Results. When the Benefits are Negative. Assigning Weights. An Industrial Engineering Application. Putting a Whole Plant Through Value Analysis.

- 9. Implementation** 163
- Strategy of Implementation. Helping Management Choose What to Implement. Implementation Requirements. Plan of Implementation. The Presentation to Management. Public Speaking Before Your Bosses. Summary. A State Document of Implementation.
- 10. Directing the Operation** 187
- The Bitters Do Most Good Upstream. How to Introduce a New Program. Getting Approval. Conducting the Value Analysis Workshop. Value Engineering in Government Contracts.
- 11. Fast Diagramming** 198
- Identifying the Relationship Among Functions. Function Analysis System Technique: FAST. Strength of the Functional Approach. Direction—Reading the Diagram Left to Right or Right to Left. To Endure, Value Analysis Must Remain Robust. Functional Analysis—Beware the Trap!
- Appendix A. Mathematics of Resource Use** 205
- Classical or Modern Mathematics? Operations Research: The Magic of Numbers. The Mathematics of Finance. Linear Algebra and Matrix Theory. Queuing Theory and the Monte Carlo Method. Some Elements of Queuing Theory. A Glimpse of the Monte Carlo Method.
- Appendix B. Measurement** 234
- Definitions of Measurement. The Functions of Measurement. Scales of Measurement. Sources on Scales of Measurement. Measuring a Value Program.

Appendix C. Professional Foundations	242
The Successful Value Specialist. Combining the Ingredients. Curriculum. Electives. Degree Courses. An Academic End-Run. Master of Science in Value Analysis. Master of Arts in Value Analysis. A University Extension Course.	
Epilogue: What I learned while revising the book.	256
Bibliography	257
Index	266