SOLE – The International Society of Logistics

Logistics Management Professionalization Guide

A Guide to Developing the
Professional Logistician in Industry and Government
Throughout the World

Section 1 Introduction

Introduction

Logistics, as with all professions, maintains a distinct standard of performance and knowledge based on academic and industry requirements. For the Acquisition and Sustainment Logisticians in Industry and Governments throughout the world, this is currently the Certified Professional Logistician (CPL) program offered by SOLE – The International Society of Logistics.

The CPL provides a standard and benchmark on which to base all training for the logistician, coupling the knowledge requirement with a demonstrated competency.

The certification is a laudable goal, and may be achieved at the completion of training; but this is not the purpose of this training program. The training outline presented within this Logistics Management Professionalization Program is focused on the development of the individual logistician skill competencies to support professional performance with a solid foundation in knowledge.

Scope

This program covers the fundamental elements of logistics in four major program areas: Program Management, System Development, Production and Deployment, and Sustainment. It covers these areas using standard academic texts in a manner similar to an academic course presentation, where the texts form the basis for the training, and individual texts cover more than one of the course areas.

This is not to say that the training for logisticians ends with the program presented here. Training is a journey, not a destination and continued professional development demands continued training. Students are encouraged to continue their individual development through education in their specialty fields and expand into additional fields as opportunities present themselves.

References

Available academic texts are used as references throughout this course. Substitution by an individual instructor is encouraged to meet local text availability, as long as both the technical content and the hours spent in local class participation are maintained.

Student Evaluation and Competencies

Classes for this program are based on the individual students having a solid educational foundation, to include attainment of a Bachelors Degree and a minimum of four years experience in the field of logistics. Students with less than this education and experience may participate in the training; however, the instructors will have to adjust the course hours to reflect additional training requirements to compensate for the additional knowledge requirements.

Completion of the courses provides a solid foundation for sitting for the CPL exam. However, it is not a guarantee of passing the exam since the exam itself is a comprehensive one covering more than is covered in this course.

Continuing Education Units (CEUs)

Continuing education units may be awarded based on the length of each course in class contact hours. One CEU is awarded for each 10 hours of class contact hours. These are awarded through SOLE based on the approval of the course conduct, content and instructor by SOLE prior to the course presentation. Instructors should contact SOLE prior to the course for full information on the CEU program, record keeping and other approval requirements.

Section 2 Foundation Competencies

General

The subjects listed in this section are those critical skills and knowledge that are needed to fully prepare the logisticians to successfully perform their individual tasks.

Although some text references are listed for information in these areas, others may be equally applicable for use in these basic areas. It is incumbent upon the instructor to select available training materials and texts based on the knowledge and background of the students.

A more comprehensive bibliography is contained in Section 6 of this document and covers additional text books and references that may be applied in selected fields.

Method of Instruction

There are no formal methods of instruction recommended for the subjects in this area of the plan. These should be structured to meet the needs of individual logisticians. A typical presentation may consist of a series of lunch time discussions or presentations and discussions at Chapter meetings of SOLE.

Mathematics

Frohne, Philip T., CPL, *Quantitative Measures of Logistics*, SOLE – The International Society of Logistics

Smith, Dr. Caroline, *Statistics for Logisticians*, SOLE – The International Society of Logistics

Knezevic, Dr. Jezdimir, *Probabilistic Elements of Reliability Maintainability and Supportability*, SOLE - The International Society of Logistics

Reliability

Ireson, W. Grant; Coombs, Clyde F.;and Moss, Richard Y., *Handbook of Reliability Engineering and Management*, McGraw Hill, ISBN: 0070127506

Human Factors

Woodson, Wesley E.; Tillman, Peggy; Tillman, Barry, *Human Factors Design Handbook (2d Edition)*, McGraw Hill Professional, ISBN: 0070717680

Sanders, Mark S. and McCormick, Ernest J., *Human Factors in Engineering and Design*, McGraw Hill, ISBN: 007054901X

Quality – Six Sigma - Lean

Pande, Peter S.; Neuman, Robert P.; and Cavanagh, Roland R., *The Six Sigma Way: How GE, Motorola, and Other Top Companies are Honing Their Performance*, McGraw Hill, ISBN: 0071358064

George, Michael L.; Rowlands, David T.; and Kastle, Bill, *What Is Lean Six Sigma?*, McGraw Hill, ISBN: 007142668X

Management & Leadership

Rubenstein, Moshe F., and Firstenberg, Iris R.*; The Minding Organization*, John Wiley & Sons, Inc., ISBN: 0471347817

Harvard Business School Publications; Harvard Business Review on Leadership

Sample, Steven B, *The Contrarian's Guide to Leadership*; Jossey-Bass, ISBN: 0787955876,

Womack, James P. and Jones, Daniel T.*; Lean Thinking*; Simon & Schuster; ISBN: 0684810352

Kotter, John P., *A Force for Change (How Leadership Differs from Management)*, The Free Press; ISBN: 0029184657

Tompkins, Jim with Jernigan, Brenda, *Goose Chase (Capturing the Energy of Change in Logistics)*, Tompkins Press; ISBN: 0965865908

Engineering Economy and Life-Cycle Cost Analysis

Blank, L. and A. Tarquin, *Engineering Economy, 5th Ed.*, McGraw-Hill, New York, NY. 2002, ISBN: 0072432349

Canada, J.R., W.G. Sullivan, and J.A. White, *Capital Investment Analysis for Engineering and Management, 2nd Ed.*, Prentice Hall, Upper Saddle River, NJ, 1996, ISBN: 0133110362

Fabrycky, W.J., G.J. Thuesen, and D. Verma, *Economic Decision Analysis*, Prentice Hall, Upper Saddle River, NJ, 1998, ISBN: 0133702499

Fisher, G.H., *Cost Considerations in Systems Analysis*, American Elsevier Publishing Co., New York, NY, 1971, ISBN: 0444000879

Hicks, D.T., *Activity-Based Costing: Making it Work for Small and Mid-Sized Companies, 2nd Ed.*, John Wiley & Sons, Hoboken, NJ, 1998, ISBN: 0471249599

Thuesen G.J. and W.J. Fabrycky, *Engineering Economy, 9th Ed.*, Prentice Hall, Upper Saddle River, NJ, 2001, ISBN: 013028128X

Section 3 Professional Development Training

General

Courses listed in this section are considered core requirements necessary to the education of the well-rounded logistician. While not all courses are required for specific assignments the overall understanding and expertise will enhance day-to-day effectiveness of the individual.

Method of Instruction

Throughout the program there are selected modules that are indicated for instructor presentation. These are minimized and limited to introductory sessions and some general knowledge areas. For the most part, the individual students are expected to study selected course materials and work chapter problems in the assigned texts prior to coming to the class. For each class a student will be selected to present his/her understanding of the assigned materials as a focal point for group discussions. Chapter problems and solutions are a follow-on to this discussion. Areas of contention or obvious incorrect presentations are corrected by the instructor for that session. This is not a self-study course and group interaction is required for successful accomplishment. Each session is expected to be a minimum of three hours (more, if needed) of class contact time to cover the materials with a given group of students.

Program Management

Author	Blanchard, Benjamin S
Title	**Logistics Engineering and Management**
Edition	Sixth
Publisher	Pearson/Prentice Hall
ISBN	0131429159
Instructor Guide	No

Session	Topic	Chapter
1	Introduction to Logistics	1
2	Reliability, Maintainability and Availability Measures	2
3	Measures of Logistics and Systems Support	3
4	The Systems Engineering Process	4
5	Logistics And Supportability Analysis	5
6	Logistics in the System Design and Development	6
7	Logistics in the Production/ Construction Phase	7
8	Logistics in the system utilization, sustaining support, and retirement phases	8
9	Logistics Management	9

System Design

Author	Blanchard, Benjamin S
Title	**System Engineering Management**
Edition	Third
Publisher	John Wiley & Sons
ISBN	0471291765
Instructor Guide	No

Session	Topic	Chapter
1	Introduction to Systems Engineering	1
2	The Systems Engineering Process	2
3	System Design Requirements	3
4	Engineering Methods and Tools	4
5	Design Reviews and Evaluation	5
6	System Engineering Program Planning	6
7	Organization for System Engineering	7
8	System Engineering Program Evaluation	8
9	Case Study (8 hours)	

Author	Ostrofsky, Dr. Benjamin S.
Title	**Design, Planning and Development Methodology**
Edition	First (fifth printing)
Publisher	Prentice Hall
ISBN	0132002469
Instructor Guide	Yes (SOLE – The International Society of Logistics)

Session	Topic	Chapter
1	Design Planning	1 to 4
2	Feasibility Studies	4 to 8
3	Analysis	9 to 17
4	Application in Functional Synthesis	Appendix C
5	Design and Modeling	18 to 21
6	Production Planning	22 to 23
7	Analysis, Simplification and Redesign	24

Production and Deployment

Author	Stevenson, William J
Title	**Operations Management** (with Student DVD and Power Web)
Edition	Eighth
Publisher	McGraw Hill
ISBN	0072971223
Instructor Guide	Yes (McGraw Hill)

Session	Topic	Chapter
1	Introduction to Operations Management	1
2	Competitiveness, Strategy, and Productivity	2
3	Forecasting	3
4	Product and Service Design	4
5	Reliability	4S
6	Strategic Capacity Planning for Products and Services	5
7	Decision Theory	5S
8	Process Selection and Facility Layout	6
9	Linear Programming	6S
10	Design of Work Systems – Learning Curves	7 and 7S
11	Location Planning and Analysis & The Transportation Model	8 and 8S
12	Management of Quality – Quality Control - Acceptance Sampling	9, 10 and 10S
13	Inventory Management	11
14	Aggregate Planning	12
15	MRP & ERP	13
16	JIT and Lean Operations Maintenance	14 & 14S
17	Scheduling	15
18	Supply Chain Management	16
19	Project Management	17
20	Waiting Lines and Simulation	18 & 18S
21	Case Study (8 hours)	

Sustainment and Customer Service

Author	Stock, James R. & Lambert Douglas M
Title	**Strategic Logistics Management**
Edition	Fourth
Publisher	McGraw Hill
ISBN	0256136874
Instructor Guide	

Session	Topic	Chapter
1	Logistics' Role in the Economy and the Organization	1
2	Supply Chain Management	2
3	Customer Service	3
4	Order Processing and Information Systems	4
5	Financial Impact of Inventory	5
6	Inventory Management	6
7	Managing Materials Flow	7
8	Transportation	8
9	Decision Strategies in Transportation	9
10	Warehousing	10
11	Material Handling, Computerization and Packaging	11
12	Procurement	12
13	Global Logistics	13
14	Global Logistics Strategies	14
15	Organizing for Effective Logistics	15
16	Logistics Performance Measurement	16
17	Measuring and Selling the Value of Logistics	17
18	Strategic Logistics Plan	18
19	Case Study (8 hours)	

Section 4 Developing Individual Skill Areas

General

Subjects in this area of training are considered supportive and expansions to the basic technical training covered in the previous sections of this document. There are no specific hours associated with this training however a continuing training program should be implemented on the local or corporate level to provide all logisticians continued growth in their chosen discipline.

Quality

For quality related courses, those offered by the American Society of Quality (ASQ) provide an expanded skill development training approach and are highly recommended on an individual basis.

Supply Chain Operations

The Supply-Chain Council provides training and workshops focused on developing proficiency in the application in the use of the Supply Chain Operations Reference-model (SCOR). .

Management

APICS – The Association for Operations Management provides on line and resident courses in the areas of Operations and Program Management.

Reliability, Maintainability and Supportability

The Reliability Analysis Center (RAC) provides two and three day seminars on Reliability, Maintainability and Supportability.

General Logistics Training

Local colleges and universities provide multiple courses that can be used to expand education in specific areas. Included in this area are on-line courses and resident instruction in the following representative institutions:

- Florida Institute of Technology
- Virginia Polytechnic Institute
- Penn State
- University of Houston
- Sloan School of Business
- Stevens Institute of Technology
- Ohio State
- University of Michigan
- University of Tennessee
- University of North Carolina - Chapel Hill
- University of Thessaloniki
- University of Athens

Section 5 United States Department of Defense Educational Opportunities in Logistics

Defense Acquisition University

The Defense Acquisition University provides a multitude of career enhancing modules on line and in resident sessions. These are generally free to the members of the Armed Forces and employees of US defense contractors.

Air Force Institute of Technology (AFIT)

The Air Force Institute of Technology offers continuing education and masters Degree programs to members of the Armed Forces and Contractor personnel in areas of management and logistics.

Army Logistics Management College (ALMC)

The Army Logistics Management College offers courses for military officers and enlisted personnel in the filed of logistics.

Section 6 LOGISTICS -- SELECTED BIBLIOGRAPHY

When addressing the subject of *logistics engineering*, one should become familiar not only with the available literature in this field, but also with some of the subject areas that are closely aligned with logistics. "Logistics," by nature, is highly *interdisciplinary* and acquiring knowledge in related areas is essential if one is to progress and successfully accomplish the objectives specified herein. With this in mind, this bibliography has been developed to cover selected references in each of the following areas:

Logistics, Supply Chain Management, and Supportability.

Systems, Systems Analysis, and Systems Engineering.

Concurrent and Simultaneous Engineering.

Software and Computer-Aided Systems.

Reliability Engineering.

Maintainability Engineering and Maintenance.

Human Factors and Safety Engineering.

Production, Manufacturing, Quality Control and Assurance.

Operations Research and Operations Management.

Engineering Economy and Life-Cycle Cost Analysis.

Management and Supporting Areas.

Logistics, Supply Chain Management, and Supportability

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3. Blanchard, B.S., *Logistics Engineering and Management*, 6th Ed., Prentice Hall, Upper Saddle River, NJ, 2004 (ISBN 0-13-142915-9).
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Chain Process, McGraw Hill, New York, NY, 1996 (ISBN 0070068836).
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6. Council of Supply Chain Management Professionals (CSCMP), *Logistics Comment*, CSCMP Newsletter, 2805 Butterfield Rd., Suite 200, Oak Brook, IL 60523.
7. Council of Supply Chain Management Professionals (CSCMP), *Annual Conference Proceedings*, CSCML, 2805 Butterfield Rd., Suite 200, Oak Brook, IL 60523.
8. Council of Supply Chain Management Professionals (CSCMP), *Journal of Business Logistics*, CSCMP, 805 Butterfield Rd., Suite 200, Oak Brook, IL 60523.
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12. Frazelle, E.H., *Supply Chain Strategy: The Logistics of Supply Chain Management*, McGraw-Hill, New York, NY, 2002 (ISBN 0-07-137599-6).
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16. MIL-PRF-49506, Performance Specification, *Logistics Management Information*, Department of Defense, Washington, D.C. (latest edition)..
17. Reliability Analysis Center (RAC), *Supportability Toolkit*, RAC, 201 Mill St., Rome, NY 13440-6916, 2005.
18. Reed Business Information, *Supply Chain Management Review*, Reed Elsevier, Inc., 360 Park Ave. South, New York, NY (bi-monthly publication).
19. SOLE-The International Society of Logistics, *Logistics Spectrum*, Quarterly Journal, SOLE, 8100 Professional Place, Suite 111, Hyattsville, MD 20785 (ISSN 00245852).
20. SOLE-The International Society of Logistics, *SOLEtter*, Bi-Monthly Newsletter, SOLE, 8100 Professional Place, Suite 111, Hyattsville, MD 20785.
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10. GEIA EIA-731-2, *Systems Engineering Capability Model Appraisal Method*, Electronic Industries Alliance (EIA), Arlington, VA, August 2002.
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13. IEEE 1233-1998, *IEEE Guide for Developing System Requirements Specifications*, Institute of Electrical and Electronics Engineers (IEEE), 345 East 47th St., New York, NY 10017, 1998 (ISBN 0738103373).
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