

References

- Akao, Y. (ed.) (1990). *Quality Function Deployment: Integrating Customer Requirements into Product Design*. Productivity Press, Cambridge, MA.
- Alexander, C. (1964). *Notes on the Synthesis of Form*. Harvard University Press, Cambridge, MA.
- Alford, M. (1985). A graph model based approach to specifications. In *Distributed Systems: Methods and Tools for Specification*. M. Paul and H.J. Siegert (eds.), pp. 131–202. Springer-Verlag, Berlin.
- Alford, M.W. (1977). A requirements engineering methodology for real-time processing requirements. *IEEE Transactions on Software Engineering* 3(1), 60–69.
- Allen, R.H. (1962). *Morphological Creativity*, Prentice-Hall, Englewood Cliffs, NJ.
- Ambler, S.W. (1997). *Building Object Applications That Work*, Cambridge University Press.
- Ambler, S.W. (2004). *The Object Primer: Agile Model Driven Development with UML 2.0*, Cambridge University Press.
- Anderson, T., and Lee, P.A. (1981). *Fault Tolerance Principles and Practice*, Prentice-Hall, Englewood Cliffs, NJ.
- Arciszewski, T. (1988). ARIZ77: An innovative method. *Journal of Design Methods and Theories* 22(2), 796–820.
- Baier, C. and Katoen, J-P. (2008). *Principles of Model Checking*. MIT Press, Cambridge, MA.
- Barron, F.H., and Barrett, B.E. (1996). Decision quality using ranked attribute weights. *Management Science* 42(11), 1515–1523.
- Baylin, E.N. (1990). *Functional Modeling of Systems*, Gordon & Breach, New York.
- Beizer, B. (1990). *Software Testing Techniques*, Van Nostrand-Reinhold, New York.
- Berube, M.S. (1991). *The American Heritage Dictionary*, Houghton Mifflin, Boston.

- Bias, R.G., and Mayhew, D.J. (eds.) (1994). *Cost-Justifying Usability*. Academic Press, Boston.
- Birnbaum, J. (1989). New qualms about the DC-10. *Time*, August 7, p. 20.
- Blanchard, B.S., and Fabrycky, W.J. (1998). *Systems Engineering and Analysis*. Prentice-Hall, Upper Saddle River, NJ.
- Blum, B.I. (1992). *Software Engineering: A Holistic View*. Oxford University Press, New York.
- Boar, B.H. (1984). *Application Prototyping: A Requirements Strategy for the 80's*. Wiley-Interscience, New York.
- Bock, C. (2006). SysML and UML 2 Support for Activity Modeling. *Systems Engineering*, 9(2), pp. 160–186.
- Boehm, B.W. (1976). Software engineering. *IEEE Transactions on Computers* C-25, 1226–1241.
- Boehm, B.W. (1981). *Software Engineering Economics*. Prentice-Hall, Englewood Cliffs, NJ.
- Boehm, B.W. (1986). A spiral model of software development and enhancement. *ACM SIGSOFT Software Engineering Notes* 11(4), 14–24.
- Boehm, B.W. (1988). A spiral model of software development and enhancement. *IEEE Computer* 21(5), 61–72.
- Boehm, B.W., and Papaccio, P.N. (1988). Understanding and controlling software costs. *IEEE Transactions on Software Engineering* 14(10), 1462–1477.
- Bohm, C., and Jacopini, G. (1966). Flow diagrams, Turing machines, and languages with only two formation rules. *Communications of the ACM* 9(5), 366–371.
- Braasch, M.S. (1990). A signal model for UPS. *Navigation* 37(4), 363–377.
- Brooks, C.G., Grimwood, J.M., and Swenson, L.S., Jr. (1979). *Chariots for Apollo: A History of Manned Lunar Spacecraft*. NASA, Washington, DC.
- Brown, C.M.L. (1988). *Human-Computer Interface Design Guidelines*. Ablex, Norwood, MA.
- Browning, T. (2001). Applying the Design Structure Matrix to System Decomposition and Integration Problems: A Review and New Directions, *IEEE Transactions on Engineering Management* 48(3), 292–306.
- Buede, D.M. (1997). Developing originating requirements: Defining the design problem. *IEEE Transactions on Aerospace and Electronic Systems* 33(2), 596–609.
- Buede, D.M. (1998). The air bag system: What went wrong with the systems engineering. *Systems Engineering* 1(1), 90–94.
- Buede, D.M. (1999). “Functional Analysis,” in *Handbook of Systems Engineering and Management*, Sage, A.P. and Rouse, W.B. (eds.), Wiley, New York, 997–1036.
- Buede, D.M. and Bresnick, T.A. (2007). Applications of Decision Analysis to the Military Systems Acquisition Process, in *Advances in Decision Analysis: from Foundations to Applications*, Edwards, W., Miles, R.F., and von Winterfeldt, D. (eds.), Cambridge University Press, Cambridge, UK.
- Buede, D.M., and Choisser, R.W. (1992). Providing an analytic structure for key system design choices. *Journal of Multi-Criteria Decision Analysis* 1, 17–27.
- Buede, D.M., and Maxwell, D.T. (1995). Rank disagreement: A comparison of multi-criteria methodologies. *Journal of Multi-Criteria Decision Analysis* 4(1), 1–21.
- Chambers, G.J., and Manos, K.L. (1992). Requirements: Their origin, format and control. In *Systems Engineering for the 21st Century*, A.F. Monision, and J.M. Wirth (eds.), 2nd Amu. Int. Symp. NCOSE, pp. 83–90, NCOSE.
- Chapanis, A. (1996). *Human Factors in Systems Engineering*. Wiley, New York.

- Chapman, W.L., Bahill, A.T., and Wymore, A.W. (1992). *Engineering Modeling and Design*. CRC Press, Boca Raton, FL.
- Charbonneau, S.M. (1996). Generation of originating requirements: Use of functional decomposition and state transition diagrams. M.S. Thesis, George Mason University, Fairfax, VA.
- Checkland, P. (1981). *Systems Thinking, Systems Practice*. Wiley, Chichester, UK.
- Childers, S.R., and Long, J.E. (1994). A concurrent methodology for the system engineering design process. In *Systems Engineering: A Competitive Edge in a Changing World*, J.T. Whalen, D. McKinney, and S. Shreve (eds.), 4th Annu. Int. Symp. of NCOSE, pp. 243–248. INCOSE.
- Chu, W.W., and Tan L.M.-T. (1987). Task allocation and precedence relations for distributed real-time systems. *IEEE Transactions on Computers* C-36(6), 667–679.
- Chusho, T. (1987). Test data selection and quality estimation based on the concept of essential branches for path testing. *IEEE Transactions on Software Engineering* 13(5), 509–517.
- Clausing, D. (1994). *Total Quality Development*. ASME Press, New York.
- Cockburn, A. (1997a). Structuring use cases with goals, Part 1. *Journal of Object-Oriented Programming* 10(5), 45–51.
- Cockburn, A. (1997b). Structuring use cases with goals, Part 2. *Journal of Object-Oriented Programming* 10(6), 56–62.
- Connell, J.L., and Shafer, L. (1989). *Structured Rapid Prototyping*. Prentice-Hall, Englewood Cliffs, NJ.
- Cook, S.C. (2000). “What the Lessons from Large, Complex, Technical Projects Tell Us about the Art of Systems Engineering”. INCOSE Symposium, Minneapolis.
- Coulouris, G., Dollimore, J., and Kindberg, T. (1994). *Distributed Systems Concepts and Design*. Addison-Wesley, Workingham, UK.
- Cox, M.E., O’Neal, P., and Pendley, W.L. (1994). LTPAR analysis: Dollar measurement of a usability indicator for software products. In *Cost-Justifying Usability*, R.G. Bias and D.J. Mayhew (eds.), pp. 145–158. Academic Press, Boston.
- Craik, K.J.W. (1943). *The Nature of Explanation*, Cambridge University Press, Cambridge, UK.
- Crowe, D., Smith, H., Haberli, G., Cohen, R.M., and Lykins, H. (1996). Adaptation of a software requirements engineering method to the system level for software-intensive systems. In *Systems Engineering: Practices & Tools*, M.J. Ross and E.E. Barker (eds.), 6th Annu. Int. Symp. of INCOSE, pp. 665–672. Raytheon Electronics.
- Daly, E. (1977). Management of software development. *IEEE Transactions of Software Engineering* 3(3), 229–242.
- Dam, S. (2006). *DoD Architecture Framework: A Guide to Applying System Engineering to Develop Integrated, Executable Architectures*. BookSurge Publishing.
- Daniels, J., Werner, P.W., and Bahill, A.T. (2001). Quantitative Methods for Tradeoff Analyses, *Systems Engineering* 4(3), 190–212.
- Davis, A.M. (1990). A comparison of techniques for the specification of external system behavior. In *System and Software Requirements Engineering*, R.H. Thayer and M. Dorfman (eds.), pp. 200–217. IEEE Computer Society Press, Los Alamitos, CA.
- Davis, A.M. (2005). *Just Enough Requirements Management: Where Software Development Meets Marketing*. Dorset House, New York.
- Davis, A.M., Bersoff, E.H., and Corner, E.R. (1990). A strategy for comparing alternative software development life cycles. In *System and Software Requirements*

- Engineering*, R.H. Thayer and M. Dorfman (eds.), pp. 496–504. IEEE Computer Society Press, Los Alamitos, CA.
- Defense Systems Management College. (1989). *Risk Management: Concepts and Guidance*. Defense Systems Management College, Ft. Belvoir, VA.
- De Finetti, B. (1974). *Theory of Probability, A Critical Introductory Treatment*, Vol. 1. Wiley, Chichester, UK.
- De Marco, T. (1979). *Concise Notes on Software Engineering*. Yourdon Press, New York.
- DeFoe, J.C. (ed.) (1993). An identification of pragmatic principles. INCOSE Report, January 21. INCOSE.
- Denning, P.J., Dennis, J.B., and Qualitz, J.E. (1978). *Machines, Languages, and Computation*. Prentice-Hall, Englewood Cliffs, NJ.
- Dickinson, B.W. (1991). *Systems: Analysis, Design, and Computation*. Prentice-Hall, Englewood Cliffs, NJ.
- Dietrich, B.L. (1991). A Taxonomy of Discrete Manufacturing Systems. *Operations Research* **39**(6), 886–902.
- Dorny, C.N. (1993). *Understanding Dynamic Systems: Approaches to Modeling, Analysis and Design*. Prentice-Hall, Englewood Cliffs, NJ.
- Driscoll, P.J. (2007). System Life Cycle, in *Decision Making in Systems Engineering and Management*, Parnell, G.S., Driscoll, P.J., and Henderson, D.L. (eds.), Wiley, New York.
- Duato, J., Yalamanchili, S., and Ni, L. (1997). *Interconnection Networks: An Engineering Approach*. IEEE Computer Society Press, Los Alamitos, CA.
- Duffy, M.A., and Buede, D.M. (1996). Structured programmatic decision support. Unpublished Technical Report.
- Dyer, J.S. (1990). Remarks on the analytic hierarchy process. *Management Science* **36**, 249–258.
- Edwards, W. (1977). How to use multiattribute utility measurement for social decision making. *IEEE Transactions on Systems, Man, and Cybernetics* **7**, 326–340.
- Edwards, W., and Barron, F.H. (1994). SMARTS and SMARTER: Improved simple methods for multiattribute utility measurement. *Organizational Behavior and Human Performance* **60**, 306–325.
- Elam, J., and Mead, M. (1990). Can software influence creativity? *Information Systems Research* **1**, 1–22.
- Engstrom, E.W. (1957). Systems engineering: A growing concept. *Electrical Engineering* **76**, 113–116.
- Eppinger, S.D. (1997). A Planning Method for Integration of Large-scale Engineering Systems. *Proceedings of the International Conference on Engineering Design IDEED-97*, Tampere, Finland.
- Fagan, M. (1974). Design and code inspections and process control in the development of programs. IBM Rep. IBM-SDD-TR-21-572.
- Fagen, M.D. (ed.) (1978). *A History of Engineering and Science in the Bell System: National Service in War and Peace (1925–1975)*. Bell Telephone Laboratories, Inc. New York.
- Faulk, S., Brackett, J., Ward, P., and Kirby, J., Jr. (1992). The Core method for real-time requirements. *IEEE Software* **9**(5), 22–33.
- Federal Information Processing Standards (FIPS) Pub. No. 183. (1993a). Integration Definition for Function Modeling (IDEFO), U.S. Dept. of Commerce, Washington, DC.

- Federal Information Processing Standards (FIPS) Pub. No. 184. (1993b). Integration Definition for Information Modeling (IDEFIX), U.S. Dept. of Commerce, Washington, DC.
- Ferrarini, L., and Maroni, M. (1997). A control algorithm for deadlock-free scheduling of manufacturing systems. *1997 IEEE International Conference on Systems, Man and Cybernetics*. Orlando, FL, pp. 3762–3767.
- Fienberg, R.T. (1990). The space telescope: Picking up the pieces. *Sky & Telescope* **80**(4), 352–358.
- Fitts, P.M. (ed.) (1951). *Human Engineering for an Effective Air-Navigation and Traffic-Control System*. Ohio State University Research Foundation, Columbus, OH.
- Forsberg, K., and Mooz, H. (1992). The relationship of systems engineering to the project cycle. *Engineering Management Journal* **4**(3), 36–43.
- Forsberg, K., and Mooz, H. (1995). Application of the ‘Vee’ to incremental and evolutionary development. In *Systems Engineering in the Global Market Place*, C. Kirkpatrick and C. Wilke (eds.) 5th Annu. Int. Symp. of INCOSE, pp. 801–808.
- Forsberg, K., and Mooz, H. (1996). Risk and opportunity management. In *Systems Engineering: Practices and Tools*, M.J. Ross and B.M. McCay (eds.), Vol. 2, 6th Annu. Int. Symp. of INCOSE, pp. 24–36.
- Frankel, E.G. (1988). *Systems Reliability and Risk Analysis*. Kluwer Academic Press, Dordrecht, The Netherlands.
- Franklin, G.F., Powell, J.D., and Emarni-Naeini, A. (1994). *Feedback Control of Dynamic Systems*. Addison-Wesley, Reading, MA.
- Frantz, W.F. (1993). Requirements: A practical, tested approach for breakthrough systems. In *Systems Engineering in the Workplace*, J.E. McAuley and W.H. McCumber (eds.), 3rd Annu. Int. Symp. of NCOSE, pp. 801–810.
- French, S. (1986). *Decision Theory: An Introduction to the Mathematics of Rationality*. Wiley, Chichester, UK.
- Fricke, E. and Schulz, A.P. (2005). Design for Changeability (DfC: Principles to Enable Changes in Systems Throughout their Entire Lifecycle. *Systems Engineering* **8**(4), 342–359.
- Friedenthal, S., Steiner, R., and Moore, A. (2008). *Practical Guide to SysML: The Systems Modeling Language*, Morgan Kaufmann.
- Friend, J., and Hickling, A. (1987). *Planning Under Pressure: The Strategic Choice Process*. Pergamon, Oxford, UK.
- Gentner, D., and Stevens, A.L. (eds.) (1983). *Mental Models*. Erlbaum, Hillsdale, NJ.
- Ghahramani, S. (1996). *Fundamentals of Probability*. Prentice-Hall, Upper Saddle River, NJ.
- Glegg, G.L. (1981). *The Development of Design*. Cambridge University Press, Cambridge, UK.
- Gobinath, P., and Gupta, R. (1990). Applying compiler techniques to scheduling in real-time systems. *1990 IEEE Real-Time Systems Symposium*, pp. 247–256.
- Gomaa, H. (1993). *Software Design Methods for Concurrent and Real-Time Systems*. Addison-Wesley, Reading, MA.
- Goodaire, E.G., and Parmenter, M.M. (1998). *Discrete Mathematics with Graph Theory*. Prentice-Hall, Upper Saddle River, NJ.
- Goode, H.H., and Machol, R.E. (1957). *System Engineering—An Introduction to the Design of Large-Scale Systems*. McGraw-Hill, New York.
- Gotel, O.C., and Finkelstein, A.C.W. (1994). An analysis of the requirements traceability problem. In *Proceedings of the 1st International Conference on Requirements Engineering*, Colorado Springs, CO, pp. 94–101.

- Grady, J.O. (1993). *System Requirements Analysis*. McGraw-Hill, New York.
- Grady, J.O. (1997). *System Validation and Verification*. CRC Press, Boca Raton, FL.
- Griffith, P.B. (1994). Different Philosophies/Different Methods: RDD and IDEF. In *Systems Engineering: A Competitive Edge in a Changing World*, J.T. Whalen, D. McKinney, and S. Shreve (eds.), 4th Annu. Int. Symp. of NCOSE, pp. 489–495.
- Guindon, R. (1990). Designing the design process: Exploiting opportunistic thoughts. *Human-Computer Interaction* **5**, 305–344.
- Haefele, J.W. (1962). *Creativity and Innovation*. Van Nostrand-Reinhold, New York.
- Hall, A. (1962). *A Methodology for Systems Engineering*. Van Nostrand, Princeton, NJ.
- Harary, F. (1972). *Graph Theory*. Addison-Wesley, Reading, MA.
- Harary, F., Norman, R.Z., and Cartwright, D. (1965). *Structural Models: An Introduction to the Theory of Directed Graphs*. Wiley, New York.
- Harel, D. (1987). Statecharts: A visual formalism for complex systems. *Science of Computer Programming* **8**, 231–273.
- Harker, P.T., and Vargas, L.G. (1990). Reply to ‘Remarks on the Analytic Hierarchy Process’ by J.S. Dyer. *Management Science* **36**, 269–273.
- Harwell, R., Aslaksen, E., Hooks, I., Mengot, R., and Ptack, K. (1993). What is a requirement? In *Systems Engineering in the Workplace*, J.E. McAuley and W.H. McCumber (eds.), 3rd Annu. Int. Symp. of NCOSE, pp. 17–24.
- Haskins, B., Stecklein, J., Brandon, D., Moroney, G., Lovell, R., and Dabney, J. (2004). “Error Cost Escalation through the Project Life Cycle,” Proceedings of the INCOSE Symposium, 2004.
- Hatley, D.J., and Pirbhai, I.A. (1988). *Strategies for Real-Time System Specification*. Dorset House, New York.
- Hazelrigg, G.A. (1996). *Systems Engineering: An Approach to Information-Based Design*. Prentice-Hall, Upper Saddle River, NJ.
- Hogarth, R.M. (1980). *Judgement and Choice: The Psychology of Decision*. Wiley, Chichester, UK.
- Holmberg, K., and Folkesson, A. (eds.) (1991). *Operational Reliability and Systematic Maintenance*. Elsevier, London.
- Honour, E.C. (2006). “A Practical Program of Research to Measure SE ROI,” Proceedings of the Systems Engineering/Test and Evaluation Conference, Melbourne, Australia.
- Hooks, I. (1994). Writing good requirements. In *Systems Engineering: A Competitive Edge in a Changing World*, J.T. Whalen, D. McKinney, and S. Shreve (eds.), 4th Annu. Int. Symp. of INCOSE, pp. 197–203.
- Hooks, I. and Farry, K. (2001). *Customer-Centered Products: Creating Successful Products Through Smart Requirements Management*, American Management Association, NY.
- Hoppe, M., Levardy, V., Vollerthun, S., and Wenzel, S. (2003). Interfacing a Verification, Validation, and Testing Process Model with Product Development Methods. Proceedings of the 13th International INCOSE Symposium, Crystal City, VA.
- Howard, R.A. (1968). The foundations of decision analysis. *IEEE Transactions on Systems, Science, and Cybernetics* **4**, 211–219.
- Howard, R.A. (1992). In praise of the old time religion. In *Utility Theories: Measurements and Applications*, W. Edwards (ed.), pp. 27–55. Kluwer Academic Publishers, Boston.
- Howard, R.A. (1993). Professional decision analysis. Unpublished manuscript. Hunger, J.W. (1995). *Engineering the System Solution*. Prentice-Hall, Englewood Cliffs, NJ.

- INCOSE (International Council on Systems Engineering). (1999). <http://www.incose.org/whatis.html>.
- Jackson, S. (2007). System Resilience: Capabilities, Culture and Infrastructure. Proceedings of the 17th International INCOSE Symposium, San Diego, CA, June, 2007.
- Jacky, J. (1990). Risks in medical electronics. *Communications of the ACM* **33**(12), 138.
- Jacobson, I. (1995). *The Object Advantage: Business Process Reengineering with Object Technology*. Addison-Wesley, Workingham, UK.
- Jacobson, I., Christerson, M., Jansson, P., and Overgaard, G. (1992). *Object-Oriented Software Engineering, A Use Case Driven Approach*. Addison-Wesley, Reading, MA.
- Jagacinski, R.J., and Miller, R.A. (1978). Describing the human operator's internal model of a dynamic system. *Human Factors* **20**, 425–433.
- Jalote, P. (1994). *Fault Tolerance in Distributed Systems*. Prentice-Hall, Englewood Cliffs, NJ.
- Jelassi, M., and Foroughi, A. (1989). Negotiation support systems: An overview of design issues and existing software. *Decision Support Systems* **5**, 167–181.
- Johnson, B.W. (1989). *Design and Analysis of Fault Tolerant Digital Systems*. Addison-Wesley, Reading, MA.
- Johnson-Laird, P. (1983). *Mental Models*. Harvard University Press, Cambridge, MA.
- Jones, D.R., and Schkade, D.A. (1995). Choosing and translating between problem representations. *Organizational Behavior and Human Decision Processes* **61**(2), 214–223.
- Jones, M. (1997). What really happened on Mars Rover *Pathfinder*. Email message, December, 11.
- Karangelen, N.E., and Hoang, N.T. (1994). Partitioning complex system design into five views. In *Systems Engineering: A Competitive Edge in a Changing World*, J.T. Whalen, D. McKinney, and S. Shreve (eds.), 4th Annu. Int. Symp. of NCOSE, pp. 675–681.
- Kee, C., Parkinson, B.W., and Axlerad, P. (1991). Wide area differential GPS. *Navigation* **38**(2), 123–144.
- Keeney, R.L. (1992). *Value-Focused Thinking*. Harvard University Press, Boston.
- Keeney, R.L., and Raiffa, H. (1976). *Decisions with Multiple Objectives: Preferences and Value Tradeoffs*. Wiley, New York.
- Keller, L., and Ho, J. (1988). Decision problem structuring: Generating options. *IEEE Transactions on Systems, Man, and Cybernetics* **15**, 715–728.
- Kirkwood, C.W. (1997). *Strategic Decision Making*. Duxbury Press, Belmont, CA.
- Kirkwood, C.W., and Corner, J.L. (1993). The effectiveness of partial information about attribute weights for ranking alternatives in multiattribute decision making. *Organizational Behavior and Human Performance* **54**, 456–476.
- Kleindorfer, P.R., Kunreuther, H.C., and Schoemaker, P.J.H. (1993). *Decision Sciences: An Integration Perspective*. Cambridge University Press, Cambridge, UK.
- Klir, G.J. (1985). *Architecture of Systems Problem Solving*. Plenum Press, New York.
- Kossiakoff, A. and Sweet, W.N. (2003). *Systems Engineering Principles and Practice*, Wiley, Hoboken, NJ.
- Kwinn, Jr., M.J. and Parnell, G.S. (2007). Decision Making, in *Decision Making in Systems Engineering and Management*, Parnell, G.S., Driscoll, P.J., and Henderson, D.L. (eds.), Wiley, NY.
- Lake, J. (1992). Systems engineering re-energized: Impacts of the revised DoD acquisition process. *Engineering Management Journal*. **4**(3), 8–14.
- Lano, R.J. (1990). A structured approach for operational concept formulation. In *System and Software Requirements Engineering*, R.H. Thayer and M. Dorfman (eds.), pp. 48–59, IEEE Computer Society Press, Los Alamitos, CA.

- Lano, R.J. (1990). The N² chart. In *System and Software Requirements Engineering*, R.H. Thayer and M. Dorfman (eds.), pp. 244–271, IEEE Computer Society Press, Los Alamitos, CA.
- Larsen, R.F. and Buede, D.M. (2002). Theoretical Framework for the Continuous Early Validation (CEaVa) Method, *Systems Engineering*, 5(3), 223–241.
- Lee, D., and Yannakakis, M. (1996). Principles and methods of testing finite state machines—A survey. *Proceedings of the IEEE* 84(8), 1090–1123.
- Levardy, V., Hoppe, M., and Honour, E. (2004). “Verification, Validation, and Testing Strategy and Planning Procedure.” Proceedings of the 14th International INCOSE Symposium, Toulouse, France.
- Levi, S., and Agrawala, A.K. (1994). *Fault Tolerant System Design*. McGraw-Hill, New York.
- Levis, A., (1993). *National Missile Defense (NMD) Command And Control Methodology Development*, Contract Data Requirements List A005 report for U.S. Army Contract MDA 903–88-0019, Delivery Order 0042. George Mason University, Center of Excellence in Command, Control, Communications, and Intelligence, Fairfax, VA.
- Levis, A.H., Moray, H., and Flu, B. (1994). Task decomposition and allocation problems and discrete event systems. *Automatica* 30(2), 203–216.
- Levis, A.H. and Wagenhals, L.W. (2000). C4ISR Architectures: I. Developing a Process for C4ISR Architecture Design. *Systems Engineering*, 3(4), pp. 225–247.
- Lindley, D. (1994). Foundations. In *Subjective Probability*, G. Wright and P. Ayton (eds.), p. 3–15. Wiley, Chichester, UK.
- Lions, J.L. (1996). Ariane 5: Flight 501 failure. Report by the Inquiry Board, Paris.
- Lovell, J., and Kluger, J. (1994). *Apollo 13* (previously titled *Lost Moon*). Pocket Books, New York.
- MacKinnon, D., McCrum, W., and Sheppard, D. (1990). *An Introduction to Open Systems Interconnection*. Computer Science Press, New York.
- Magee, C.L. and de Weck, O.L. (2004). “Complex System Classification” Proceedings of the 14th Annual International Symposium of INCOSE.
- Magnuson, E. (1989). Brace! Brace! Brace! *Time*, July 31, pp. 12–15.
- Manna, Z., and Waldinger, R. (1978). The logic of computer programming. *IEEE Transactions on Software Engineering* 4, 199–220.
- Mar, B.W. (1994). Requirements for development of software requirements. In *Systems Engineering: A Competitive Edge in a Changing World*, J.T. Whalen, D. McKinney, and S. Shreve (eds.), 4th Annu. Int. Symp. of INCOSE, pp. 39–44.
- Marca, D.A., and McGowan, C.L. (1988). *SADT: Structured Analysis and Design Technique*. McGraw-Hill, New York.
- Marshall, C., Nelson, C., and Gardiner, M.M. (1987). Design guidelines. In *Applying Cognitive Psychology to User-Interface Design*, M.M. Gardiner and B. Christie (eds.), pp. 221–278. Wiley, Chichester, UK.
- Martin, J.N. (2004). “The Seven Samurai of Systems Engineering: Dealing with the Complexity of the 7 Interrelated Systems.” Proceedings of the 14th International INCOSE Symposium.
- Maxwell, J.C. (1868). On governors. *Proceedings of the Royal Society of London* 16. (Reprinted in (1964) *Selected Papers on Mathematical Trends in Control Theory* Dover, New York.
- Mayhew, D.J. (1992). *Principles and Guidelines in Software User Interface Design*. Prentice-Hall, Englewood Cliffs, NJ.

- Mayr, O. (1970). *The Origins of Feedback and Control* [translated from *Zur Frühgeschichte der technischen Regelungen*]. MIT Press, Cambridge, MA.
- McMenamin, S.M., and Palmer, J.F. (1984). *Essential Systems Analysis*. Prentice-Hall, Englewood Cliffs, NJ.
- Meisenzahl, J., de la Cruz, M., and Vollerthun, A. (2006). Establishing a Verification and Validation Process in Automotive Development: Increasing Product Quality while Reducing Costs. Proceedings of the 16th International INCOSE Symposium, Orlando, FL.
- Merkhofer, M.W. (1987). Quantifying judgmental uncertainty: Methodology, experiences, and insights. *IEEE Transactions on Systems, Man, and Cybernetics* **17**, 741–752.
- Military Standard (1974). MIL-STD 499A. Systems Engineering.
- Military Standard (1993). MIL-STD 499B (draft). Systems Engineering.
- Military Standard (1993). MIL-STD 881B. Work Breakdown Structure.
- Miller, J.G. (1978). *Living Systems*. McGraw-Hill, New York.
- Milliken, W.F., and Milliken, D.L. (1995). *Race Car Vehicle Dynamics*. SAE International, Warrendale, PA.
- Mott, J.L., Kandel, A., and Baker, T.P. (1986). *Discrete Mathematics for Computer Scientists and Mathematicians*. Prentice-Hall, Englewood Cliffs, NJ.
- Mowbray, T.J., and Ruh, W.A. (1997). *Inside CORBA: Distributed Object Standards and Applications*. Addison-Wesley, Reading, MA.
- Mowbray, T.J., and Zahavi, R. (1995). *The Essential CORBA: Systems Integration Using Distributed Objects*. Wiley, New York.
- Murata, T. (1989). Petri nets: Properties, analysis and applications. *Proceedings of the IEEE* **77**(4), 541–580.
- Murray, C., and Cox, C.B. (1989). *Apollo: The Race to the Moon*. Simon & Schuster, New York.
- Nagel, S.S. (1989). *Evaluation Analysis with Microcomputers*. JAI Press, Greenwich, CT.
- Newell, A. (1969). Heuristic programming: Ill structured problems. In *Progress in Operations Research*, J. Aronofsky (ed.), pp. 362–414. Wiley, New York.
- Nielsen, J. (1993). *Usability Engineering*. AP Professional, Boston, MA.
- Nii, H.P. (1986). Blackboard systems: Blackboard applications systems, blackboard systems from a knowledge engineering perspective. *AI Magazine* **7**(3), 82–106.
- Oliver, D.W., Kelliher, T.P., and Keegan, J.G., Jr. (1997). *Engineering Complex Systems with Models and Objects*. McGraw-Hill, New York.
- Orfali, R., Harkey, D., and Edwards, J. (1997). *Instant CORBA*. Wiley, New York.
- Ottaway, D.B. (1996). A safety device with a fatal flaw. *Washington Post*, October 27, pp. A1, A8–A9.
- Pages, A., and Gondran, M. (1986). *System Reliability: Evaluation and Prediction in Engineering*. Springer-Verlag, New York.
- Pennington, N. (1985). Stimulus structures and mental representations in expert comprehension of computer programs, Tech. Rep. No. 2-ONR. University of Chicago, Graduate School of Business, Chicago.
- Perdu, D.M., and Levis, A.H. (1993). Requirements determination using the Cube tool methodology and Petri nets. *IEEE Transactions on Systems, Man, and Cybernetics* **23**(5), 1255–1264.
- Perry, W.E. (1988). *A Structured Approach to Systems Testing*. QED Information Sciences, Wellesley, MA.
- Petersen, C.C., and Brandt, J.C. (1995). *Hubble Vision: Astronomy with the Hubble Space Telescope*. Cambridge University Press, Cambridge, UK.

- Petroski, H. (1994). *Design Paradigms: Case Histories of Error and Judgment in Engineering*. Cambridge University Press, New York.
- Pohl, E. (2007). System Effectiveness, in *Decision Making in Systems Engineering and Management*, Parnell, G.S., Driscoll, P.J., and Henderson, D.L. (eds.), Wiley, New York.
- Pohl, E. and Nachtmann, H. (2007). Life Cycle Costing, in *Decision Making in Systems Engineering and Management*, Parnell, G.S., Driscoll, P.J., and Henderson, D.L. (eds.), Wiley, New York.
- Prang, J. (1992). Controlling life-cycle costs through concurrent engineering In *Addendum to the ATE & Instrumentation Conference Proceedings*, p. 1. Miller-Freeman, Anaheim, CA.
- Prasad, B. (1996). *Concurrent Engineering Fundamentals: Integrated Product and Process Organization*, Vol. 1. Prentice-Hall, Upper Saddle River, NJ.
- Price, H.E. (1985). The allocation of functions in systems. *Human Factors* **27**(1), 33–45.
- Pugh, S. (1991). *Total Design — Integrating Methods for Successful Product Engineering*. Addison-Wesley, Reading, MA.
- Rasmussen, J. (1979). On the Structure of Knowledge—A Morphology of Mental Models in a Man-Machine System Context, Tech. Rep. No. Riso-M-2192. Riso National Laboratory, Roskilde, Denmark.
- Rational Software Corporation (1997). *Unified Modeling Language: Notation Guide*, Rational Software Corporation, Cupertino, CA.
- Reason, J. (1990). *Human Error*. Cambridge University Press, Cambridge, UK.
- Reed, M.A. (1993). Requirements traceability on the F-22 program. In *Systems Engineering in the Workplace*, J.E. McAuley and W.H. McCumber (eds.), 3rd Annu. Int. Symp. of NCOSE, pp. 293–300.
- Reitman, W.R. (1965). *Cognition and Thought*. Wiley, New York.
- Richardson, D.J., and Clarke, L.A. (1985). Partition analysis: A method combining testing and verification. *IEEE Transactions on Software Engineering* **11**(12), 1477–1490.
- Rittel, H. (1972). On the planning crisis: Systems analysis for the first and second generations. *Bepripts Konotnen* **8**, 390–396.
- Roberts, R.A. (1992). *An Introduction to Applied Probability*. Addison-Wesley, Reading, MA.
- Rosen, K.H. (1995). *Discrete Mathematics and Its Applications*. McGraw-Hill, New York.
- Ross, A.M., Diller, N.P., Hastings, D.E. and Warmkessel, J.M. (2004). Multi-Attribute Tradespace Exploration with Concurrent Design as a Front-End for Effective Space System Design. *Journal of Spacecraft and Rockets* **41**(1), 20–28.
- Royce, W.W. (1970). Managing the development of large systems: Concepts and techniques. *Proceedings of the 9th International Conference on Software Engineering*, pp. 328–338. ACM, New York.
- Saaty, T.L. (1980). *The Analytical Hierarchy Process*. McGraw-Hill, New York.
- Saaty, T.L. (1986). Axiomatic foundation of the analytic hierarchy process. *Management Science* **32**, 841–855.
- Sage, A.P. (1992). *Systems Engineering*. Wiley, New York.
- Sailor, J.D. (1990). System engineering: An introduction. In *System and Software Requirements Engineering*, R.H. Thayer and M. Dorfman (eds.), pp. 35–47. IEEE Computer Society Press, Los Alamitos, CA.

- Samson, D. (1993). Knowledge-based test planning: Framework for a knowledge-based system to prepare a system test plan from system requirements. *Journal of Systems Software* **20**, 115–124.
- Savage, L.J. (1954). *The Foundations of Statistics*. Wiley, New York.
- Scheiber, S.F. (1995). *Building a Successful Board-Test Strategy*. Butterworth-Heinemann, Boston.
- Schlager, K.J. (1956). Systems engineering — Key to modern development. *IRE Transactions of Professional Group Engineering Management* **3**, 64–66.
- Schmekel, H., and Wingard, L. (1993). Consistency and completeness of multiple models in product development. In *Concurrent Engineering: Methodology and Applications*, P. Gu and A. Kusiak (eds.), pp. 31–68. Elsevier, Amsterdam.
- Schwartz, M. (1987). *Telecommunication Networks: Protocols, Modeling and Analysis*. Addison-Wesley, Reading, MA.
- Sen, A.K. (1970). *Collective Choice and Social Welfare*. Holden-Day, San Francisco.
- Shachter, R.D. (1986). Evaluating influence diagrams. *Operations Research* **34**, 871–882.
- Shachter, R.D. (1990). An ordered examination of influence diagrams. *Networks* **20**, 535–563.
- Sheridan, T.B., and Verplanck, W.L. (1978). *Human and Computer Control of Undersea Teleoperators*. Report of Man-Machine Systems Lab. Dept. of Mech. Eng. MIT, Cambridge, MA.
- Shin, I. and Levis, A.H. (2003). Performance Prediction of Networked Information Systems Via Petri Nets and Queuing Nets, *Systems Engineering*, **6**(1), 1–18.
- Shlaer, S., and Mellor, S. (1996). *How to Build Object Models*. Yourdon Press, New York.
- Shneiderman, B. (1992). *Designing the User Interface*. Addison-Wesley, Reading, MA.
- Shuey, R.L., Spooner, D.L., and Frieder, O. (1997). *The Architecture of Distributed Computer Systems*. Addison-Wesley, Reading, MA.
- Simon, H.A. (1973). The structure of ill-structured problems. *Artificial Intelligence* **4**, 145–180.
- Sinnott, R.W. (1990). HST's magnificent optics... What went wrong? *Sky & Telescope* **80**(4), 356–357.
- Spetzler, C.S., and Stael von Holstein, C.A. (1975). Probability encoding in decision analysis. *Management Science* **22**, 340–385.
- Stevens, R., and Martin, J. (1995). What is requirements management? In *Systems Engineering in the Global Market Place* Vol. 2, C. Kirkpatrick and C. Wilke (eds.), 5th Annu. Int. Symp. of INCOSE, 11–32.
- Stillwell, W.G., Seaver, D.A., and Edwards, W. (1981). A comparison of weight approximation techniques in multiattribute utility decision making. *Organizational Behavior and Human Performance* **28**, 62–77.
- Suh, N.P. (1990). *The Principles of Design*. Oxford University Press, New York.
- Taguchi, G. (1993). *Taguchi on Robust Technology*. ASME Press, New York.
- Terninko, J., Zusman, A., and Zlotin, B. (1996). *Step-by-step TRIZ: Creating Innovative Solution Concepts*. Responsible Management, Nottingham, NH.
- Thurston, D.L., and Carnahan, J.V. (1993). Intelligent evaluation of designs for manufacturing cost. In *Concurrent Engineering: Automation, Tools, and Techniques*, A. Kusiak (ed.), pp. 437–461. Wiley, New York.
- Ulvila, J.W., and Snider, W.D. (1980). Negotiation of international oil tanker standards: An application of multiattribute value theory. *Operations Research* **28**, 81–96.
- Van de Vegte, J. (1994). *Feedback Control Systems*. Prentice-Hall. Englewood Cliffs, NJ.

- van den Hamer, P., and Lepoeter, K. (1996). Managing design data: The five dimensions of CAD frameworks, configuration management, and product data management. *Proceedings of the IEEE* **84**(1), 42–56.
- VanGundy, A.B. (1988). *Techniques of Structured Problem Solving*. Van Nostrand-Reinhold, New York.
- Veldhuyzen, W., and Stassen, H.G. (1977). The internal model concept: An application to modeling human control of large ships. *Human Factors* **19**, 367–380.
- Voges, U., and Taylor, J.R. (1985). Systematic testing. In *Verification and Validation of Real-Time Software*, W.J. Quirk (ed.), pp. 115–146. Springer-Verlag, Berlin.
- Von Neumann, J., and Morgenstern, O. (1947). *Theory of Games and Economic Behavior*. Princeton University Press, Princeton, NJ.
- von Winterfeldt, D., and Edwards, W. (1986). *Decision Analysis and Behavioral Research*. Cambridge University Press, New York.
- Walters, J.M. (1994). Systems engineering applied to strategic planning: The LASE follow-on study. In *Systems Engineering: A Competitive Edge in a Changing World*, J.T. Whalen, D. McKinney, and S. Shreve (eds.), 4th Annu. Int. Symp. of INCOSE, pp. 889–895.
- Walton, M., and Hastings, D. (2004). Applications of Uncertainty Analysis to Architecture Selection of Satellite Systems. *Journal of Spacecraft and Rockets* **41**(1), 75–84.
- Warfield, J.N. (1990). *A Science of Generic Design: Managing Complexity through Systems Design. (Vol. 1 and 2)*. Intersystems Publications, Salinas, CA.
- Watson, S.R., and Buede, D.M. (1987). *Decision Synthesis: The Principles and Practice of Decision Analysis*. Cambridge University Press, Cambridge, UK.
- Wenzel, S., Bauch, T., Fricke, E., and Negele, H. (1997). Concurrent engineering and more ... A systematic approach to successful product development. In *Systems Engineering: A Necessary Science*, L.M. Hritz and E.E. Barker (eds.), 7th Annu. Int. Symp. of INCOSE, pp. 617–624.
- West, P.D. (2007). Solution Design, in *Decision Making in Systems Engineering and Management*, Parnell, G.S., Driscoll, P.J., and Henderson, D.L. (eds.), Wiley, New York.
- Wieringa, R.J. (1995). Combining static and dynamic modeling methods: A comparison of four methods. *The Computer Journal* **38**(1), 17–30.
- Wiklund, M.E. (ed.) (1994). *Usability in Practice*. AP Professional, Boston.
- Wilner, D. (1997). *Vx-Files: What Really Happened on Mars*. Keynote address at IEEE Real-Time Systems Symposium, San Francisco.
- Wright, G., and Ayton, P. (eds.) (1994). *Subjective Probability*. Wiley, Chichester, UK.
- Wymore, A.W. (1993). *Model-based Systems Engineering*. CRC Press, Boca Raton, FL.
- Yager, R.R. (1978). Fuzzy decision-making including unequal objectives. *Fuzzy Sets and Systems* **1**, 87–95.
- Yoon, K. (1980). Systems selection by multiple attribute decision making. Ph.D. Dissertation for Kansas State University, Manhattan, KS.
- Yourdon, E. (1989). *Modern Structured Analysis*. Yourdon Press, New York.
- Yourdon, Inc. (1993). *Yourdon Systems Method*. Yourdon Press, New York.
- Zwicky, F. (1969). *Discovery, Invention, Research through the Morphological Approach*. Macmillan, New York.