Managing Complex Problems: An Interactive Toolkit | *November 2017*

The Challenge: Complex Problems
Current operating environments require that Army leaders have well-developed capabilities to understand and solve complex problems. To manage the volatility and complexity, the Army needs leaders who can think both tactically and strategically, and who are capable of

- developing a holistic understanding of multi-dimensional problems;
- visualizing potential future states; and
- identifying ways to shape the future to the benefit of U.S. and allied partners' interests.

Advances in complex problem solving
The U.S. Army Research Institute's (ARI) research program on strategic thinking and design has generated important insights and findings related to complex problem solving in operational settings. For example, the Army has identified the skills, knowledge, training, education, and support tools that individuals and teams require to respond adeptly; the challenges Army leaders face in understanding and solving complex problems; strategies for meeting those challenges; and what Army leaders can do to support complex problem-solving by their staffs and units.

What's Next: A practical toolkit
Currently, a team of consultants led by ARI is working with products from ARI's research program to develop an interactive, multimedia toolkit designed for use by Army leaders to better understand and manage complex operational problems. The toolkit will incorporate practical guidance, tips, examples, and exercises identified or developed under the ARI research program.

What will be in the toolkit?
The interactive toolkit will contain, for example:
- guidance pertaining to the knowledge, skills, and abilities needed for complex problem solving;
- tips for leading teams tasked with identifying potential solutions to complex problems;
- tips and resources for depicting and communicating about complex problems;
- practical exercises to help build skills associated with complex problem solving such as
  - recognizing connections and inter-dependencies (systems thinking);
  - reflecting before, during, and after events to stimulate learning;
  - asking powerful questions to drive understanding; and
  - anticipating alternative future scenarios and 2nd- and 3rd-order effects of actions.
- video clips conveying expert perspectives on activities associated with complex problem solving.

Who should use the toolkit?
The multimedia toolkit is intended primarily for the operational community, including unit Commanders and planning staff. However, it will also be useful for instructors and students in the various schoolhouses to augment coursework related to complex problem solving.

When will it be available?
The toolkit will be posted to the Central Army Registry (CAR) at the end of 2QFY18. The CAR is formerly known as the Reimer Digital Library and can be found by going through Army Knowledge Online to the My Training tab under Self Service.

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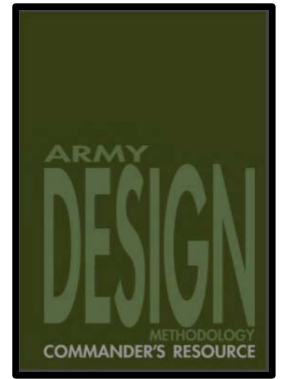angela.i.karrasch.civ@army.mil

Products Included in the Toolkit:

A set of four **practical exercises** designed to support development of skills associated with complex problem solving and strategic thinking. Each exercise includes a comprehensive set of materials for a facilitator and participants to use before, during, and after the exercise sessions. Exercises include:

- **Reflecting on the Environment.** Participants practice reflective thinking through guided reflection on recent operational experiences. Skills addressed include reflective thinking and systems thinking.

- **Asking Powerful Questions.** Participants practice inquiry, purposeful questioning, and information seeking. Skills addressed include questioning, information gathering, systems thinking, and synthesis.

- **Telling a Story: An Exercise in Connecting the Dots.** Participants practice identifying connections across seemingly disparate pieces of information, and integrating them into a coherent whole. Skills addressed include systems thinking, synthesis, hypothesis generation, cognitive flexibility, and sensegiving.

- **Envisioning Potential Futures.** Participants practice examining a current situation in order to anticipate how it may evolve into the future. Skills addressed include thinking in time, strategic foresight, questioning and testing, systems thinking, and sensegiving.
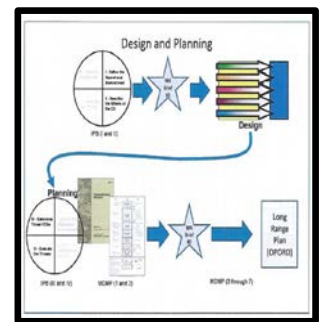
Army Design Methodology: Commander's Resource. The Resource supports application of Army Design Methodology (ADM) in operational settings. It identifies common challenges to applying ADM in the field and offers practical suggestions for managing them, along with strategies, tips, and real-world examples. It was developed to support Commanders and planners leading ADM efforts in operational settings, as well as planning teams engaged in ADM activities.

An Integrated Planning System: Commander and Staff Handbook. The handbook provides best practices for integrated planning by Army units in the field and at the Combat Training Centers. It is designed to support commanders and staff's successful execution of Army Design Methodology, the Military Decision Making Process, and Troop Leading Procedures within the operations process.

Making Sense of Complex Problems: A Resource for Teams. Designed to support planning teams and their leaders tasked with making sense of complex, unfamiliar problems in operational settings, the Resource can be used both as a primer and as a reference tool. It provides practical guidance, strategies and real-world examples organized in modules that address:

- Assembling and Leading a Team
- Getting a Team Ready to Work
- Building Trust and Team Identity
- Engaging Problems as a Team
- Communicating with Stakeholders