Problem Statement

The potential for enhanced weapons system sustainment through the incorporation of additive manufacturing calls for a critical look at the passages and cycles of innovation routinization.

Research Question

How do the ALCs determine their degree of the routinization of additive manufacturing?

Investigative Questions

Question 1: What passages and cycles contribute to determining an ALC’s degree of the routinization of additive manufacturing?
Question 2: What issues prohibit the ALCs from achieving the highest degree of the routinization of additive manufacturing?
Question 3: What additional factors were found to affect the degree of the routinization of additive manufacturing in the ALCs?

Analysis

Pattern match to keywords from collected data to theoretical propositions to determine the accomplishment of specific passages and cycles of innovation routinization.

Passage or Cycle | Key Words
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Equipment Turnover | Machine type, maintenance, projects, uses
Support by Local Funds | Established budget, budget, funds request process
Supply and Maintenance | In-house, out-house, materials, warranty
Personnel Certification | Prior experience, length of time with AM, special certification
Formal Guidance | AFIs, official memorandums, verbal guidance
Training Program | Trainers, training report, proficiency
Promotion of Key Personnel | Promotions, new hires,
Turnover of Key Personnel | New hires, gaps in personnel, manning

Results

- ALC A accomplished 4 of 9 passages and cycles; AM moderately routinized.
- ALCs B and C accomplished 5 of 9 passages and cycles; AM moderately routinized.
- All passages and cycles found to be relevant in degree determination, but degree of relevance dependent upon organizational age of the innovation.
- The lack of the accomplishment of five passages and cycles prevented the ALCs from achieving the highest degree of routinization.
- Top management support was identified as an additional passage that may affect the degree of routinization of future innovations.

Implications

This study identifies the current degree of the routinization of additive manufacturing in each ALC. The results will serve to guide the ALCs towards the accomplishment of specific passages and cycles that will increase their degree of routinization.