

# NEW ARMY AND DOD RELIABILITY SCORECARD

Nancy Welliver (AMSAA)  
 Marguerite Shepler (AMSAA)

In December 2007, the Army Acquisition Executive approved the new Army Reliability Policy. The policy was developed to cost-effectively increase the reliability of Army systems. The new policy encourages use of cost-effective reliability best practices and provides a mechanism to alert key Army leaders when weapon systems are off track with respect to meeting their reliability requirements.

One of the policy's key elements is an early review of reliability and testing efforts to determine if a program is on the right path for achieving the reliability requirements. In order to execute this policy element in a consistent way, the Army Materiel Systems Analysis Activity (AMSAA) and the Army Evaluation Center (AEC) developed a new Reliability Scorecard. The scorecard examines a supplier's use of reliability best practices, as well as the supplier's planned and completed reliability tasks. The scorecard can also be used to evaluate a given program's reliability progress. AMSAA, in support of AEC, will evaluate a system's reliability program plan using the scorecard.

The current version of the scorecard was developed based, in part, on reliability assessment approaches developed by the IEEE, Raytheon, Alion, the University of Maryland, and others. AMSAA and AEC expanded and refined the individual assess-

ment areas based on several years of evaluation and reliability program experience.

The scorecard evaluates eight critical areas: (1) Reliability Requirements and Planning, (2) Training and Development, (3) Reliability Analysis, (4) Reliability Testing, (5) Supply Chain Management, (6) Failure Tracking and Reporting, (7) Verification and Validation, and (8) Reliability Improvements. Each element is rated either red, yellow, or green based on a number of elements. This scorecard is important in tracking the achievement of reliability requirements and rating the adequacy of the overall Reliability Program.

The current qualitative rating will eventually transition to a quantitative scoring process as more programs are evaluated and more data become available.

The scorecard was one of the key products of the OSD Reliability Improvement Working Group (RIWG). The scorecard has been posted to the Defense Acquisition University Acquisition Community Connection and can be accessed at <https://acc.dau.mil/CommunityBrowser.aspx?id=210483&lang=en-US>. The scorecard has already been successfully applied to several Army weapon system programs.

## Reliability Scorecard

- 8 Categories
  - Reliability requirements and planning
  - Training and development
  - Reliability analysis
  - Reliability testing
  - Supply chain management
  - Failure tracking and reporting
  - Verification and validation
  - Reliability Improvements
- For each category there are several elements with associated rating criteria

**Structured engineering and analytical approach to identify weak performers early**

### Example of an Element within Reliability Analysis Category

<b>Critical loads and stresses are characterized; life cycle environment and operation duty cycle stresses are characterized</b>	
Clearly define estimates of life-cycle user and environment loads, update periodically, verify with measurements on pre-production systems/products. the developer must characterize the critical loads and stresses. Validate with additional testing and data collection.	Green
Estimate life-cycle user environmental loads from "like-system" in similar operational environments. Measurements not verified on actual system through testing and data collection.	Yellow
Life-cycle user environmental loads and duty cycle stresses are not defined.	Red