



## Department of Defense Increasingly Requiring Use of HALT/HASS Testing in Critical Military Programs to Improve Reliability

*(August 9, 2016) Qualmark Corporation, the global leader in Highly Accelerated Life Testing and Highly Accelerated Stress Screening methodologies and solutions, today released the following statement in advance of its participation in the 19th Annual Space & Missile Defense Symposium to be held August 16-18, 2016, in Huntsville, AL:*

Facing continued downward budgetary pressures, Department of Defense (DOD) leaders and program managers are looking for ways to improve the reliability of weapons systems and other military equipment. To help accomplish this objective, the DOD is increasingly turning to proven testing methodologies known as Highly Accelerated Life Testing and Highly Accelerated Stress Screening (HALT/HASS) and associated test equipment developed and produced by Qualmark Corporation.

Based in Denver, CO, Qualmark is the global leader in HALT/HASS solutions. Qualmark's customers include top Aerospace and Defense firms as well as DOD organizations. HALT/HASS has demonstrated its value in Defense programs and systems as diverse as avionics, flight controls, missile guidance, power supplies, space systems, and more.

A growing number of DOD organizations have required implementation of HALT/HASS on critical programs through issuance of policy statements, regulations, and other directives. Noteworthy examples include the following:

- **Missile Defense Agency (MDA) Policy Memorandum #77** (November 12, 2014) implemented a HALT/HASS policy for all MDA programs. The policy requires evaluation of HALT/HASS for all new development and redesign efforts that require a delta qualification for an existing product baseline. A **March 2014 MDA Report to Congress** concluded that HALT/HASS testing can have a positive impact on the maturity and reliability of hardware and add value to programs when applied early in the design phase on parts, subassemblies and units still in development.
- **Army Regulation 702--19 ("Reliability, Availability and Maintainability")** directs that HALT shall be planned and funded prior to prototype fabrication to support the establishment of profiles for environmental stress screening. The ESS planning and profiles will be developed prior to production for all Army acquisitions that include electronic, electrical or electromechanical hardware.
- **Navy Reliability, Availability and Maintainability (RAM) Policy** directs that programs will ensure design and verification tests for RAM are planned for and incorporated into contracts as applicable. This includes the appropriate RAM design activities such as development of a Design Reference Mission profile, electrical/mechanical/thermal stress analyses, worst case circuit/tolerance analyses, failure modes, effects, and criticality analyses, built -in test/testability designs, and RAM modeling and analysis.... During Systems Development and Demonstration, programs will address the use of in--process test and evaluation, such as HALT and other stress testing, and requirements for reliability growth development testing.
- **The Under Secretary of Defense for Acquisition, Technology & Logistics (USD/AT&L)** recently issued a report on the value, feasibility and cost of greater utilization of HALT/HASS. Below are excerpts from the July 2016 USD/AT&L report:
  - "A comprehensive T&E program includes practices such as HALT and HASS to discover and mitigate failure modes throughout the development and production process.... HALT is an effective tool that is part of a comprehensive T&E program. The value of HALT is the early discovery of failure modes and failure mechanisms and the mitigation of those failures during the development process.... Implementing HALT can help expose failure modes in the increasingly complexity of today's new technology, which makes it difficult to predict failure modes and mechanisms."
  - "HALT needs to be included as part of the Engineering and Manufacturing (EMD) request for Proposal (RFP) so that the activities are part of the overall effort."
  - "The Army has long acknowledged that HALT/HASS and similar reliability engineering activities are





critical to substantially improving the reliability of acquisition systems. [According to Army Regulation 702-19], environmental stress screening and HALT will be used to ensure that reliable, available and maintainable systems are produced and deployed that will be devoid of latent part and manufacturing process defects.”

- “When performed properly, HALT addresses system reliability in two ways: 1) it improves the system’s resistance to irregular events (i.e., lowers the system’s failure rate during its “useful” life period) and 2) it lengthens the system’s useful life (uncovers components of the system that wear out first so that they can be improved). For this to happen, the maximum stress boundaries must be explored.”
- “HALT/HASS methodology has been proven to be an effective tool that is part of a comprehensive T&E program. The value of HALT is the early discovery of failure modes and the mitigation of those failures during the development process, whereas the value of HASS is the early identification of latent or intermittent failures of production items before a significant number of the items have been produced.... HALT and HASS are parts of a holistic approach to improving system reliability....”

In conclusion, Qualmark’s HALT/HASS methodology and test equipment is now widely understood by DOD decisionmakers to help provide greater reliability in electronic components and subcomponents of critical weapons, sensors and other military systems. As a result, senior DOD program and acquisition officials are increasingly mandating implementation of HALT/HASS testing as part of Military Service and Defense Agency contracts.

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To learn more about Qualmark’s HALT/HASS products and services, please visit [www.qualmark.com](http://www.qualmark.com) or contact Alan Perkins, Vice President for Business Development (1--303--718--3604 or [aperkins@qualmark.com](mailto:aperkins@qualmark.com)). *Qualmark will exhibit at **booth #428** – SMD, Huntsville, AL – August 16-18, 2016.*

