# Short-Range Anti-Tank Weapon (SRAW)
# Minimum Safe Arming Distance
# Test and Evaluation Plan

**v.1.0**

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**Defense Acquisition University (DAU)**

**DAWIA T&E Curriculum Final**

# Revision History

| Date | Revision | Description | Author |
|---|---|---|---|
| 12/17/2019 | 1.0 | Initial Release, Final Exam | K.L. Geels, Student |
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# 1 Purpose

This document generally outlines the plan for testing and evaluating the minimum safe arming distance Critical Technical Parameter (CTP) of the SRAW. It describes in a general way the structure, major elements, and objectives of the test, as derived from the SRAW Test and Evaluation Master Plan (TEMP) and Capabilities Design Document (CDD). The SRAW is an ACAT II program listed on the OSD T&E Oversight List. It will be operated by the United States Marine Corps.

# 2 Test Objective

The CTP for a minimum safe arming distance of the SRAW is defined as – for safety purposes - that distance which the missile must travel away from its launch point prior to self-arming. This distance must be traveled prior to self-arming so that damage to or loss of life and property at the launch site is avoided. The purpose of this test plan is to outline the plan that will be used to verify that the arming distance of the SRAW is equal to the Critical Test Parameter of 16 meters or more. Testing of this CTP occurs in DT-2 of the Engineering & Manufacturing Development (EMD) phase and is integrated with Initial Operational Testing & Evaluation (IOT&E) testing. Wherever possible, the test-result data generated from these tests will be reused for IOT&E testing and qualifications.

# 3 Test Scenarios/Set-up

Test scenarios will consist of fully assembled SRAW Unit Under Test (UUT). During the CTP test, the fully assembled missile will be launched from points and positions to ensure the arming device works as intended when operated under conditions which simulate combat environment.

Test set-ups will be designed to measure the distance traveled prior to self-arming, and to simulate multiple launching scenarios and launch positions, including:

- Launching from an enclosed position such as a masonry room which emulates a combat-fortified bunker,(typically measuring 4.57m X 3.66m X 2.1m, possess 1.86 square meters of ventilation), and fighting positions with front and rear vent area of 1.4 square meters each.
- Launch site scenarios emulating gunner engagement angles ranging from 30-degree depression to 30-degree elevation, and initial roll angle of up to 15 degrees, and up to 10 degrees of obliquity.

# 4 Success Criteria

The Critical Test Parameter (CTP) for the self-arming capability of the warhead is 16 meters. The pass criterion for an assembled weapon is that the missile arm itself only after having traveled at least 16 meters from its launch point-of-origin.

# 5 Test Article/Target Requirements

For distance testing, the testing range will be marked at 16 meters from the launch point. Because DT-2 testing is combined with live-fire testing and conducted on a qualification batch consisting of only 125 missiles, the minimum safe arming distance tests will be combined with performance tests of all 125 missiles. While targets may or may not be involved for unrelated performance tests, they are essential to the tests for minimum safe arming distance tests. The only condition which must be met during the minimum safe arming distance tests is that the distance traveled can be accurately verified on the test range. The SRAW will be fired from multiple positions, per the CDD, to ensure the distance is fully cleared prior to self-arming, including when launched from elevation, depression, obliquity, and from within small enclosures with limited ventilation. In addition to whatever targets are incorporated into the performance aspect of the test, the test range must be clearly marked, and the moment of arming must be visually verified compared to the test range markings, preferably using video for precise evaluations.

# 6 Confidence Levels

Reliability for the Safe-and-Arm CTP must achieve 95% with a .95 confidence rating. To achieve this rating, of the 125 test-missiles firings, no more than 2 firings may fail to meet the Safe-and-Arm CTP of 16 meters.

# 7 Test Limitations

SRAWs used during developmental testing are subject to design modifications for the purpose of design enhancements. Therefore, the SRAWs tested during DT-2 may vary slightly from the final production version.

# 8 Acronyms

| **Acronym/Term** | **Definition** |
|---|---|
| ACAT | Acquisition Categories |
| CDD | Capabilities Design Document |
| CTP | Critical Technical Parameter |
| EMD | Engineering & Manufacturing Development |
| IOT&E | Initial Operation Test & Evaluation |
| OSD | Office of the Secretary of Defense |

| Acronym/Term | Definition |
|---|---|
| SRAW | Short-Range Anti-Tank Weapon |
| T&E | Test & Evaluation |
| TEMP | Test and Evaluation Master Plan |
| UUT | Unit Under Test |