

# F-15 TCG Briefing: MTS-3060A SmartCan™ Update

We Make <sup>ACE</sup>Test Easy™

Presented by: Jon Semancik



- A world-leader in Alternate Mission Equipment (AME) production, sustainment, test equipment, and land systems
- Innovative military and aerospace solutions that are backed by unrivaled long-term support
- A privately-held, 60+ year strong small-business





## Aircraft Armament Equipment

- Pylons
- Bomb Racks
- Ejector Racks
- Missile Rail Launchers
- Multiple Carriage Systems



## Test Systems / Software Solutions

- I-Level / Depot Test Sets
- O-Level / Flightline Test Sets
- Armament / Munition Test Sets
- COTS instruments & test executive
- Airborne Electronics products



## Land Systems

- Weapons Stations
- Auxiliary Power Units
- Vehicle Environmental Systems
- Mission Critical Equipment Trailers

Comprehensive Solutions and Support Capabilities  
Repair / Overhaul / Upgrades / Maintenance / Training

# MTS: A World Leader in Armament & Munition Test



## Summary:

- Over 600 test sets
- 30 Countries
- Deployment started in 1994

- Innovative military and aerospace test solutions that are backed by unrivaled long-term support
- Making Test Easy™ for our customers worldwide from the flightline to the depot





- Many DoD test sets become obsolete after worldwide deployment, creating production and sustainment issues that lead to refresh and extensive regression testing
- Test Sets produced by MTS remain available and supportable for decades – not the typical 10-15 years
  - Apache Armament testers deployed worldwide in 1994 are still in use
  - An F-16 SMS tester deployed in 1995 is still in daily use and has just started an MLU program (after 29 years!)
  - Over the past 30 years, Marvin Test Solutions has delivered hundreds of armament testers to over 50 customers in 30 countries
    - **All of these testers are still supported by MTS with spares and repairs as well as remote- and on-site engineering support**

# MTS-3060A SmartCan™ Universal O-Level Test Set



- Responding to the need to bridge The **Armament Test Gap** in 4<sup>th</sup> and 5<sup>th</sup> Generation aircraft and air defense systems, Marvin Test Solutions developed the next generation universal O-Level armament test set, helping customers worldwide to:

***“Verify that the weapon will fire/release when it’s supposed to and not fire/release when it’s not supposed to”***

























**The MTS-3060A SmartCan™ delivers capabilities previously unavailable in a handheld O-level test set, meeting the USAF ACE and Mission Ready Airmen needs today**



- The SmartCan tests MIL-STD-1760 Smart weapons by emulating Weapons (JDAM, AMRAAM, AIM-9X, Paveway, etc.)
  - Enables a full functional test of the entire system
- SmartCan provides sophisticated parametric measurement capabilities
  - Previously unavailable on the flight-line
- The SmartCan is already deployed in 19 countries
  - F-16, F-15, F/A-18, P-1, P-3, Hawk, LCA, and air defense systems
- Easily upgradeable
  - Capable of testing all F-35 armament systems

- **Gen2 SmartCan is deployed by the Air National Guard**
  - All F-16, A-10, and F-15 units
  
- Gen2 SmartCan is SERDed
  - SERD 75A77
  
- Gen2 SmartCan awarded Cybersecurity Authorization to Operate (ATO)
  - Issued by UASF for the SmartCan
  - Covers the ANG's F-16s, F-15s, and A-10s

## Global SmartCan Deployment: 19 Countries / 14 Platforms

	ME & A	Americas	Europe	Asia
F-16				
F-15				
T-50/FA-50				
F/A-18				
Hawk				
F-5				
P-1/P-3				
LCA				
UAS				
AH-64				
Air Defense				

2025 Planned Deployment: 22+ Countries, 15+ platforms

## Deployed MDS

F-16  
F-15  
F/A-18  
T-50/FA-50  
F-5  
Hawk  
Tejas LCA  
P-1 / P-3  
AH-64  
A-10  
UAS  
Air Defense

## Available

F-35  
F-22 / NGAD  
B-1  
B-2  
B-21  
B-52  
ANY Armed Platform



## Deployed Munitions

AIM-120  
AGM-65  
AIM-7  
AIM-9L/M/X  
Hellfire  
1760 Weapons (JDAM)  
Harpoon  
HARM  
Python / Derby  
IRIS-T  
A-Darter  
Taurus

## Planned

ASRAAM  
Many More!

- Built-In Test (BIT):
  - An extensive test of most internal assemblies and circuits
- Self-Test:
  - Comprehensive self-test of the SmartCan™ and cables
- Innovative Calibration:
  - Built-in precision references allow a **4 year calibration cycle**
  - Calibration verification can be done at unit level or by PMEL
- Rapid Test Times:
  - Test times reduced by over 90%

Legacy O-Level F-16, A-10 & F-15  
armament test sets



VS.

SmartCan kit for  
F-16, A-10 & F-15





## ■ Test Data

- Test data is saved automatically by the MTS-3060A after each run
- Test logs can be viewed during and immediately after test run
- Test logs can be downloaded for additional diagnostics, trend analysis, or training
- A unique data driven capability not typically available with other handheld O-Level test sets

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*****
SmartCan Serial Number: 00BC2398
SmartCan FW Ver: 0xAA5F
SmartCan FPGA Ver: 0xAA0C
SmartCan NIOS Ver: 0xAA1E
SmartCan CPLD Ver: 0xAA02
ATEasy Serial Number: 11
Program Part Number: 3162-217-21
Program Name: LAU129
Program Rev: A.c
Program Date: Thu Dec 08
Aircraft Tail Number: n_a
Equipment Serial Number: n_a
Battery Voltage: 8.960
System Temp (C): 18.59
Start Time: 2022-12-15 09:59:38
*****

*****
Task 1 : GND Check
*****

Test 1 : J8-9 to J8-21
Desc : Verify short @ J8-9 to J8-21
Pin : J8-9/21
Min 0 Res 0.384 Ohm Max 5 PASS

Test 2 : J9-17 to J9-29
Desc : Verify short @ J8-17 to J8-29
Pin : J9-17/29
Min 0 Res 0.395 Ohm Max 5 PASS

Test 3 : Launch Latch
Desc : Verify open @ Launch Latch to GND
Pin : J8-3/9
Min 100 Res 10948.001 Ohm Max 5000000 PASS

Test 4 : Cage Slew
Desc : Verify open @ Cage Slew to GND
Pin : J8-23/9
Min 100 Res 965729.562 Ohm Max 5000000 PASS

```

# MTS-3060A SmartCan™ Cyber Security



- MTS is at the **forefront** of test equipment cyber security with multiple “firsts”:
  - The MTS-3060A SmartCan is the **most** cyber-secure flightline test set available today
    - Custom operating system, program encryption, and a removable hard disk (SD card)
  - ATEasy, TPS development environment and test executive
    - **First** Test Executive software to be Cyber-Certified by the U.S. Air Force for use on the flightline
  - MTS MTS-207
    - First portable armament test set to be cyber-certified by the U.S. Air Force

- The Marvin Group offers more than 61 years of experience (founded 1963) providing AME, EPU/ECU, and associated test and support equipment
  - Marvin Test Solutions was founded in 1988
- Marvin Test Solutions **offers innovative test solutions** that meet the customers' needs coupled with **unrivalled long-term support**



For More Information Contact:

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# Thank You for Attending!

We Make <sup>ACE</sup>Test Easy™

