

“...testing can be used to show the presence of bugs, but never to show their absence...” Edsger Dijkstra

Towards a Test Standard for Conducted Energy Weapons

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Agenda

- ⌞ Thank you for opportunity to present
- ⌞ Why is a Test Standard is necessary?
- ⌞ What is the content of the Carleton protocol?
- ⌞ Is there complete harmony in the universe?
- ⌞ Next steps
- ⌞ Questions
- ⌞ Reference
 - ⇒ <http://curve.carleton.ca/papers/2010/CEW-Test-Procedure-2010-ver1.1.pdf>

Why is a test standard necessary?

- ⌞ Validating performance of new weapons
 - ⇒ Value for money
 - ⇒ Budgetary decisions
- ⌞ Verifying operational readiness for use
 - ⇒ Safety of officers
- ⌞ Forensic examination of weapons ex post facto
 - Was weapon working correctly?
- ⌞ Differing test organizations
- ⌞ Independence and transparency

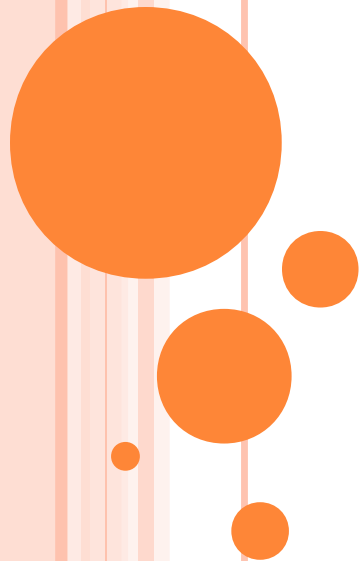


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Why is a test standard necessary?

- Independance and transparency
- Life cycle management of an asset



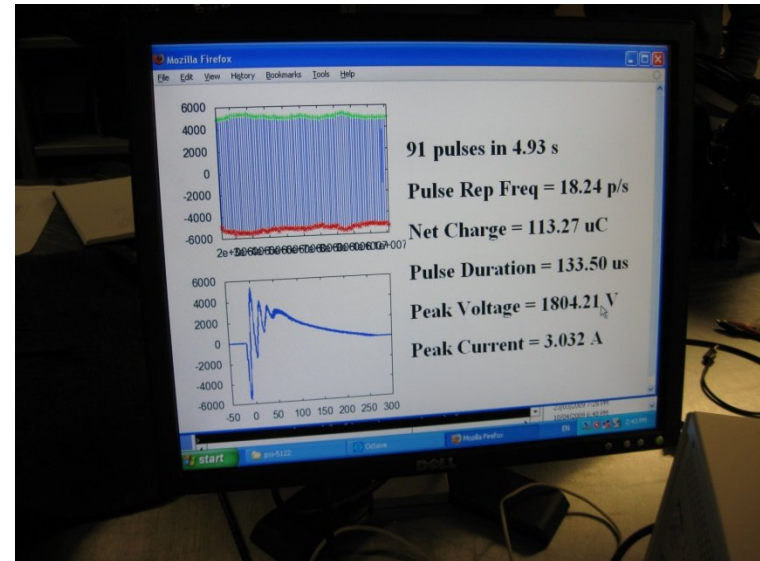
What is the content of the Carleton Protocol?

General test procedure

- ⇒ Physical inspection
- ⇒ Sampling rates
- ⇒ Quantization
- ⇒ Duration of sample
- ⇒ Number of shots taken
- ⇒ Sound measurement and instrumentation procedures
- ⇒ Upset limit (maximum charge per pulse)

Specific indexes for specific weapons

- ⇒ M-26
- ⇒ X-26
- ⇒ Manufacturer's indicated performance standards



Who wrote the Carleton Protocol?

- † Dr. Andy Adler, Carleton University Canada
Research Chair in Biomedical Engineering,
Dept. of Systems and Computer Engineering
- † Dave Dawson, Research associate
- † Dr. Ian Sinclair, Senior Scientist, MPB
Electronics Test Centers,
- † Mark Miller, Design Engineer, Datren
- † Laurin Garland, President & CEO, Vernac
Engineering



Is there any dispute about the Test procedure?

- Yes
- Testing to manufacturer's specifications is OK
- Indicating an upset limit for VF risk is contentious
 - VF may not be the problem
 - Clinical evidence is not convincing where it exists

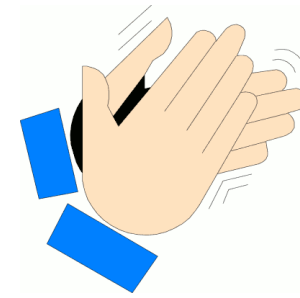


What is the Positive output from the test Procedure?

- Police services and oversight agencies are beginning to take operation and maintenance of CEW's much more seriously.
- Governments are assured that due diligence is being exercised in use and care of CEW's.
- Standardized data sets are being generated over the entire pulse stream to enable better biomedical research.



What are the Next Steps?



- Our 1 year old Test Procedure has been applauded and criticized
- Re-evaluate the testing experience of the last year done in accordance with the Test Procedure
- Thank you for your interest
- Questions?

