

**IME**

**institute of makers of explosives**

# OHMS R&D Initiatives

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[www.ime.org](http://www.ime.org)



# Who we are

- Founded in 1913, we are the Institute of Makers of Explosives
- We are a safety and security institute of the commercial explosives industry
- Our mission is to promote safety, security and the protection of employees, users, the public and the environment and to **encourage the adoption of uniform rules and regulations** in the manufacture, transportation, storage, handling, use and disposal of explosive materials used in blasting and other essential operations
- Although our members are based in North America, IME member companies operate globally with operations and distribution points on all continents except Antarctica

# We are the IME

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## Members

- Accurate Energetic Systems, LLC
- Austin Powder Company
- Baker Hughes, Inc.
- Davey Bickford USA Inc.
- Detotec North America, Inc.
- DYNAenergetics, US, Inc.
- Dyno Nobel Inc.
- General Dynamics - OTS Munitions
- GEODynamics, Inc.
- Hunting Titan, Inc
- Jet Research Center/Halliburton
- Maine Drilling & Blasting
- Maxam North America, Inc.
- MP Associates, Inc.
- MuniRem Environmental LLC
- Nelson Brothers, Inc.
- Nobel Insurance Services
- Orica USA Inc.
- Owen Oil Tools LP
- Safety Consulting Engineers
- Secured Land Transport
- Senex Explosives. Inc.
- SLT Secured Systems International, LLC
- Special Devices Inc
- Teledyne RISI
- Tread Corporation
- Tri-State Motor Transit Company
- Vet's Explosives, Inc.
- Visionary Solutions LLC/Interstate Ventures, Inc.
- W.A. Murphy, Inc.

## Liaison Class Members

- Canadian Explosives Industry Association (CEAEC)
- Explosives Safety and Technology Society –Visfotak, India
- Federation of European Explosives Manufacturers (FEEM)
- International Society of Explosives Engineers (ISEE)
- SAFEX International (SAFEX)

# Our members

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- R&D Initiatives Supported by IME
  - OHMS R&D Strategic Plan, 2012-2017
    - Energetic HM Research
  - Short-, Mid-, and Long-term Proposals

# What we recommend

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- Gas-fired UN 6(c)
  - ✓ **Description:** Development of a portable LPG apparatus for the 6(c) test
  - ✓ Initial work completed and reported to UN TDG and its working group on explosives (EWG) at the 45<sup>th</sup> Session (June 2014)
  - ✓ EWG found the apparatus practical and field-portable but recommended further study of potential effects of wind
  - ✓ EWG also recommended reconciliation of LPG fire with wood fire to ensure that results are consistent when using either method
  - ✓ **IME Recommendation:** PHMSA should continue this initiative to address the recommendations of the EWG

## Short- and Mid-term initiatives (1)

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- Test Series 6(c) Bonfire Test
  - ✓ **Description:** Research methods to better measure thermal flux and/or heat irradiance observed in 6(c) test to support work by EWG to review Test Series 6
  - ✓ Proposed by PHMSA at last forum
  - ✓ IME identified the need for this in its report to the TDG/EWG at the 45<sup>th</sup> Session and recommended study be included in the work program for the 2015 – 2016 biennium
  - ✓ Review of thermal flux measurement and evaluation will be recommended at the 47<sup>th</sup> Session (June 2015)
  - ✓ **IME Recommendation:** PHMSA should set aside funds to participate in the study. IME members would contribute samples and staff assistance in support of the study.

## Short- and Mid-term initiatives (2)

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- Test Series 6
  - ✓ **Description:** IME is leading EWG project to review Test Series 6 to correct over specifications, inconsistencies, errors, and confusing instructions.
  - ✓ At 45<sup>th</sup> Session, IME short-term proposals were supported by EWG and approved by TDG.
  - ✓ IME also described several elements of TS6 that deserved in depth review during 2015 – 2016 biennium, including:
    - Preparation of background notes to aid understanding of the tests
    - Review of applicability of tests in instances where tested products cannot function in the transport package
    - Update specification for UN Standard Detonator. As described in the Manual of Tests and Criteria, this detonator is no longer commercially available.
    - Review of metallic projection & thermal effects hazards analysis and assessment
    - Review of witness panel construction and placement in the 6(c) test
  - ✓ **IME Recommendation:** PHMSA should set aside funds to participate in the in depth reviews. IME members would contribute samples and staff assistance in support of the work.

# Short- and Mid-term initiatives (3)

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- Test Series 8(d)
  - ✓ **Description:** Research methods to better evaluate suitability to transport ANEs (UN3375) in portable tanks
  - ✓ Current test for this is the 8(d) which is a large scale test with potential for damage to surroundings and injury to testers
  - ✓ EWG has identified the need for smaller scale tests to perform the evaluation
  - ✓ **IME Recommendation:** PHMSA should set aside funds to participate conduct research into smaller scale alternatives for the 8(d) test. IME members would contribute samples and staff assistance in support of the study.

## Short- and Mid-term initiatives (4)

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- Fire rating for IME-22 box
  - ✓ **Description:** Conduct research to develop a fire rating for the IME-22 box.
  - ✓ The IME-22 box is integral to PHMSA's HMR (49 CFR 177.835(g)).
  - ✓ Recent work with the USCG identified the lack of a fire rating.
  - ✓ **IME Recommendation:** IME is presently studying the issue and may come to the next forum with a more formalized statement of work.

## Long-term initiatives

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